National Aeronautics and
Space Administration
Ames Research Center
Moffett Field, California 94035

NASA

The Astrogram

VOLUME XX NUMBER 25

October 5, 1978

Duty-free flight to Venus

Ames is getting a $12,000 refund of import duty paid for the diamond window aboard its Pioneer-Venus Multiprobe spacecraft – because the window isn't in the country anymore. It's on its way to Venus.

The diamond window was imported from Holland and is aboard one of the five Venus atmosphere entry craft, into which the Multiprobe will have split by November 20 – 19 days before its arrival at the cloud-shrouded planet.

The window is part of the Sounder Probe, largest of the Pioneer probes. The Sounder Probe reaches the planet's surface on December 9.

Customs regulations allow a refund of import duty, paid for the components of products which are subsequently shipped out of the country.

The Sounder atmosphere entry craft carries six infrared radiometer detectors. These "look out" through the diamond port hole to measure the heat of Venus' atmosphere. The diamond window, about the size of a half dollar, is made of industrial-grade diamond. It is required because only diamond is tough enough to withstand Venus' searing atmosphere (hotter than the melting point of zinc at the surface) and still let through the proper infrared wavelengths.

The Pioneer-Venus Orbiter was launched on May 20. It will reach Venus December 4 and orbit the planet a year or more. The Multiprobe spacecraft was launched August 7. Both spacecraft are managed and controlled here at Ames. They are built by Hughes Aircraft Co.

The Pioneers are intended to profile Venus' "simple weather machine." This should help us understand the poorly understood forces driving Earth's weather.

Major Milestones reached in space

A flight-configured developmental Space Shuttle engine has exceeded 5,000 seconds in test firing at NASA's engine test facility in Bay St. Louis, Miss. This is significant because that mark is the same as a production engine must meet in order for the Space Shuttle main propulsion system to be certified for manned flight.

Space Shuttle main engine testing, both in the number of tests and time accumulated, has increased dramatically since August 12, 1978. In this period of time, approximately 7,100 seconds of testing time have been accumulated on two engines, bringing the total time of engine testing to more than 25,000 seconds in 342 tests.

Of these tests, five consecutive runs of 520 seconds (the amount of time the engines must fire to

(Continued on Page 2)

1978 Combined Federal Campaign begins Oct. 16

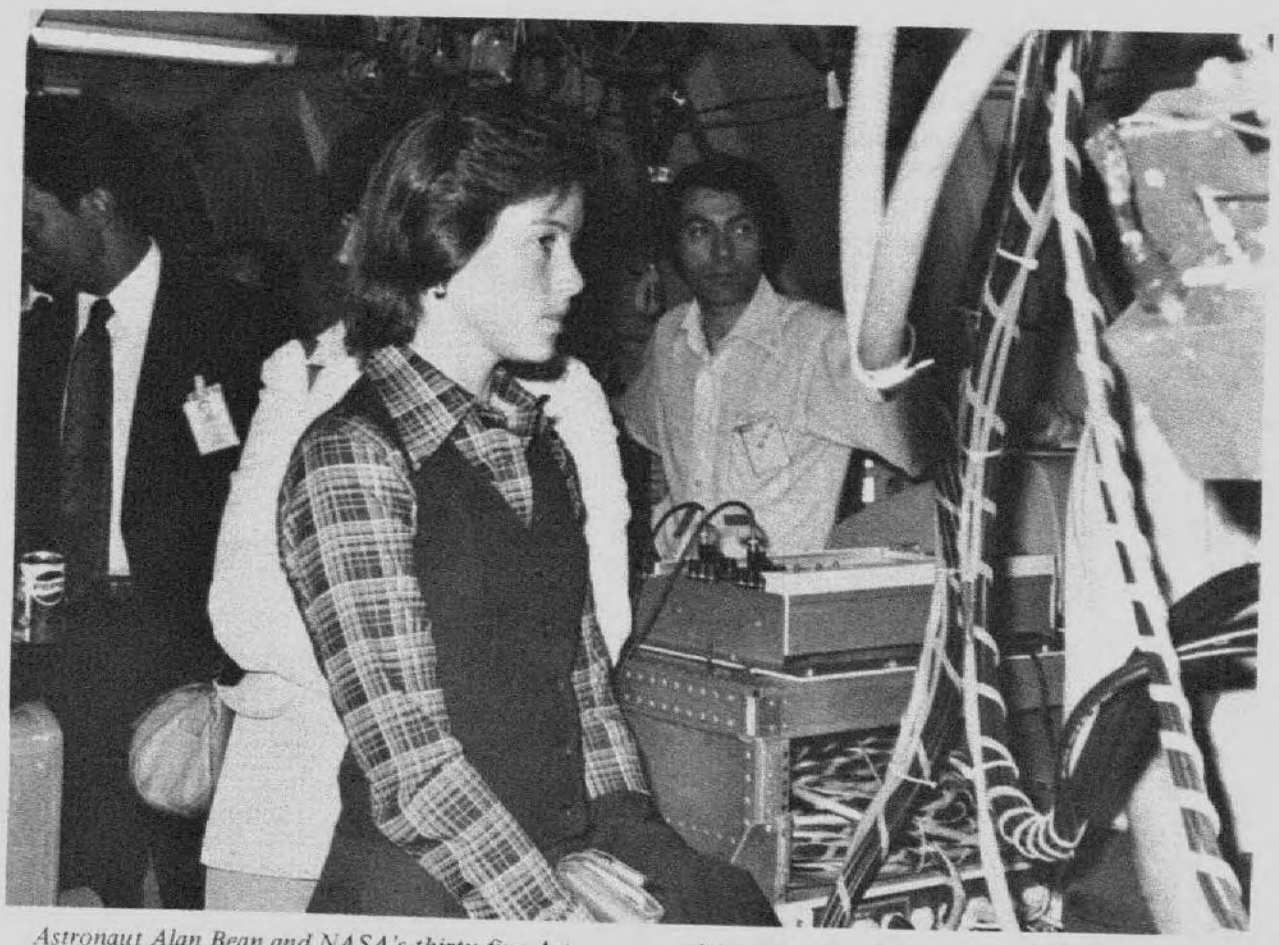
This is the time of year when we begin planning for the Combined Federal Campaign (CFC), the once-a-year solicitation in all Federal Agencies to support local, national, and international human service agencies. The Santa Clara Valley CFC encompasses over 100 United Way service organizations and projects, 12 national health agencies, and six international service agencies. This year, the campaign will be conducted during the week of October 16. Each employee will be contacted by a campaign solicitor and encouraged to make a payroll deduction gift to support these worthy agencies. Last year, more than 90% of Ames employees participated in the CFC.

The Campaign Coordinator is Benjamin R. Briggs of the Technology Applications Branch. Knapp A. Tomberlin, Chief, Office of University Affairs, will serve as co-coordinator and is the coordinator-designate for the 1979 CFC. Edward Castle of the Financial Systems Office will represent the Fiscal Services Division to manage the necessary detailed accounting of pledges.

For the fourth year running, Ames has been asked to provide a Loaned Executive to the Santa Clara County United Way, to assist in conducting the CFC in the more than 50 federal agencies and offices in the County. This year, C. J. Fenrick of the Resources Management Office is our Loaned Executive.

The CFC at Ames opens officially on October 16 with a kickoff rally at 10:30 a.m. in the Main Auditorium. Campaign Captains, Solicitors, and all interested employees are urged to attend this rally.

Astronaut candidates visit and tour ARC



Astronaut Alan Bean and NASA's thirty-five Astronaut candidates toured Ames on Monday, Oct. 2. Bean, of Apollo 12 and Skylab 2, is heading up the training of the new candidates. Everyone was familiarized with Ames in general; of particular interest to the group was the briefing on the Thermal Protection System (TPS) here at Ames and the Life Sciences as it relates to the Shuttle activities.

Alaskan cruise enjoyed by AMES jetsetter group

Twenty-two Ames Jet Setters boarded the S.S. Veendam in Vancouver, B.C. and cruised the Inland Passage to Alaska. Everyone enjoyed sight-seeing in Ketchican, Juneau, Sitka and Glacier Bay via land, sea, and air. They saw salmon-spawning runs, glaciers breaking into icebergs, sea and bird life, Russian dancing, and totem poles. They experienced sun, rain, and cool weather. The shipboard life included before- and after-dinner dancing, floor shows, gaming tables, slot machines, sport competition, movies, and a variety of audience-participation games, including bingo and horse racing. Especially appreciated were gourmet menus and midnight snacks.

Many awards were won by the Jet Setters: Bill Ross–Special dance contest; Mitch Radovich–Shuffleboard tournament; Ed Rozewicz–Backgammon tournament; Armando Lopez–Quiz show; Keith Bozeman–Class A division table tennis; Mitch Radovich–Class B division table tennis. If an award were to be given for picture taking, the Macon's would be Number 1! The trip climaxed with a sightseeing tour of beautiful Vancouver, B.C.

Space milestones

(Continued from Page 1)

place the Space Shuttle in orbit) were conducted on one engine at rated power level. Preliminary flight certification requires 5,000 seconds on a flight engine and is expected in the spring of 1979.

Full duration testing of the complete main propulsion system, a cluster of three engines, is scheduled to resume in early 1979 when the first manned orbital flight configuration engines become available.

Hispanic Happy Hour a success

Hispanic Advisory Group members who worked on the Hispanic Happy Hour are from left to right: Ruben Ramos, Bea Morales, Jack Osorno, Jake Martinez, Annette Laboy, and Mike Orozco. Not shown are Eloy Martinez, and Afred Llamas.

FEW invites members to Oct. 11 meeting

The South Bay Chapter of Federally Employed Women (FEW) invites all federal (military and civilian) employees (men and women) to its next meeting on Wednesday, October 11, from 5:30 to 7:30 p.m. at Mercury Savings and Loan in the San Antonio Shopping Center in Mountain View.

The program is on "Enhancing Your Self Image." Sheila Murray, founder and president of Horizons ("Live Each Day"), will be the guest speaker.

Ms. Murray has had extensive experience in the personal development field since the mid-1960's, when she was a coordinator and member of the board of directors of an institute that trained brain-damaged children.

Ms. Murray has given workshops about personal development for the Emporium stores, Kaiser Aluminum, Rancho La Puerta (Tecate, Mexico) and many other companies throughout the United States.

"Thank You"

To all my friends at Ames who made my retirement luncheon a memorable occasion, thank you very much. I will certainly enjoy the charm bracelet and my days here at Ames for many years to come.

Marian Davis

Many thanks to the attendees of my farewell luncheon at the Officer's Club on September 6. I am most grateful to all who contributed towards the beautiful gifts and especially to those who devoted their time and effort in making this a memorable luncheon for me. Leaving the wonderful people at Ames is sad and most difficult for me, but the beautiful friendships and pleasant memories of the past will linger on, be cherished and never forgotten.

Ginny Sanford

Want ads

(Continued from Page 4)

WANTED CAR SEAT for toddler. Call 259-1939 after 6 p.m.

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WANTED USED PORTA-CRIB. Call Bonnie Roszell after 5:30 p.m. 797-7414.

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FOR SALE: 2 twin-size mattress and box spring sets. Used only one year. $50 each. Small on-the-counter washer, $35. Call Rotem Ext. 6139.

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Twin mattress set w/metal frame. Exc. cond. $50. Call 329-9038.

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FOR SALE: Infant dressing table, exc. condition. brown wood, padded top. Asking $35. Call 374-9998, ask for Jan.

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Panasonic 8-track tape, stereo-radio phono w/speakers, still new, $95. Kenmore washer, $30. Portable sewing machine. 1970 Ambassador, good condition engine, interior/exterior. Best offer. Call 415/657-4611.

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Brittany Spaniel, spayed female; trained, obedient pointer, excellent children's pet. Free to good home. Ext. 5244, after 5 p.m., 265-2403.

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Sofa bed, $100; Washer/Dryer, both need some work, $50 each; Refrigerator, $50; magazine rack, wood, new, $10.00. Call 253-3989.

National Aero

SPECIAL BULLETIN

MOFFETT CREDIT UNION

MCU'S NEW BUILDING NEARS COMPLETION

Moffett Credit Union is proud to announce that their new facilities will soon be open. Construction is expected to be completed by the first week of October and the "move in" date is set for October 10, 1978.

The new office represents a great step forward for your credit union. Adequate space is provided for future growth as well as present needs and there is plenty of parking.

MCU SAVINGS GROW BIGGER AND EASIER BY PAYROLL DEDUCTION

Payroll deductions offer an easy and painless way to save regularly. Now is the best time to start a payroll deduction or add to an existing one. If you are one of our many members who will be getting a pay increase, set aside a little bit of that money for yourself.

For members who are interested in fixed term certificate accounts, our Savings Counselors recommend transferring to our new Share Certificate Accounts at regular intervals as your payroll deductions add up.

Whether you choose to save a little or a lot, your credit union has a plan to fit your needs. Just stop in or phone for complete information on how we can make your money work for you.

SHARE CERTIFICATE ACCOUNTS NOW AVAILABLE

If you currently have insured saving deposits at other financial institutions, you owe it to yourself to compare rates. You may be able to significantly increase the income on your savings by simply transferring your account to Moffett Credit Union.

7 3/4 %* PER ANNUM 4-4 1/3 YEAR CERTIFICATE

7 1/4 %* PER ANNUM 2-2 1/3 YEAR CERTIFICATE

Dividends on these accounts are compounded quarterly. The minimum share certificate amount is $1,000 and larger certificates are available in $1,000 multiples.

Each member account insured to $40,000 NCUA

• RATES SPECIFIED ARE SUBJECT TO REGULATIONS WHICH PROHIBIT PAYMENT OF DIVIDENDS IN EXCESS OF AVAILABLE EARNINGS. REGULATIONS REQUIRE SUBSTANTIAL INTEREST PENALTY FOR EARLY WITHDRAWAL FROM SHARE CERTIFICATE ACCOUNTS.

CALL US FOR THE RATE AND TERMS ON OUR SPECIAL PROMISSORY CERTIFICATES OF $10,000

MOFFETT CREDIT UNION, P.O. BOX 127, N.A.S. MOFFETT FIELD, CA 94035 (415) 969-6222

NASA/Ames Research Center

CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

OCT 16 –
Combined Federal Campaign
Kick-Off Rally
Time: 10:30-11:30 a.m.
Location: N-201 Main Auditorium
Sponsor: Ben Briggs, x5897

OCT 17 –
AHS/San Francisco Bay Area Chapter
Dinner Meeting
Speaker: Sergei I. Sikorsky
Topic: "The Recollections of a Pioneer" The birth of aviation and its developments as witnessed by Igor Sikorsky
Time: 6:00 p.m. – Cocktails
7:00 p.m. – Dinner
Location: Chez Yvonne,
1854 El Camino Real,
Mountain View, CA
Call: John Bull (415) 965-5425 by October 13th for reservations and entree selection

Aeronautics Corporate Memory
Seminar
Speaker: J. Lloyd Jones, NASA-Ames Research Center
Topic: High-Speed Aeronautical Research
Time: 1:00-3:00 p.m.
Location: N-201 Main Auditorium

OCT 18 –
Series of space shuttle briefings
Speaker: William B. Lenoir (Ph.D., E.E.), Sci. Astronaut to brief Ames staff on current space shuttle program activities.
Schedule to be announced later by Public Affairs office.

OCT 19 –

OCT 20 –

OCT 23 –

OCT 24 –
Aeronautics Corporate Memory
Seminar
Speaker: Harvard Lomax, NASA-Ames Research Center
Topic: Computational Fluid Dynamics
Time: 1:00-3:00 p.m.
Location: N-201 Main Auditorium

OCT 25 –

OCT 26 –

OCT 27 –

OCT 30 –

OCT 31 –
Aeronautics Corporate Memory
Seminar
Speaker: Maurice White
Topic: Flight Dynamics Research/ Simulation Technology
Time: 1:00-3:00 p.m.
Location: N-201 Main Auditorium

NOV 1 –

NOV 2 –
Initiation of construction ceremonies for 80- by 120-foot wind tunnel. An announcement will be distributed at a later date.

NOV 3 –
If you wish to have an event announced on this Calendar, please notify Linda Mackey, Visits Coordinator, ext. 5546, Mail Stop 253-1. She must receive the information by Wednesday between publication dates in order to meet the deadline.

WEEKEND ACTIVITIES:

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

AMES RESEARCH CENTER

October 10, 1978 thru October 16, 1978

A LA CARTE MENU

TUESDAY
Old Fashioned Stewed Chicken and Dumplings..... 1.45
Spanish Rice and Bacon..... 1.30
Choice of One: Whipped or Hashed O'BRien Potatoes, Peas, Buttered Corn or Salad
Soup - Cream of Fresh Mushroom..... .30 & .45

WEDNESDAY
Ham Steak Hawaiian Style..... 1.45
Tamale Pie Casserole..... 1.30
Choice of One: Au Gratin or Whipped Potatoes, Buttered Spinach, Glazed Carrots or Salad
Soup - Old Fashioned Navy Bean..... .30 & .45

THURSDAY
Smothered Liver with Onions..... 1.45
Pork Fried Rice..... 1.30
Choice of One: Mashed or Lyonnaise Potatoes, Green Beans, Cauliflower or Salad
Soup - Fresh Vegetables and Beef..... .30 & .45

FRIDAY
Roast X-Rib of Choice Beef..... 1.45
Seafood Curry over Biscuit..... 1.30
Creole or Cheddar Cheese Omelette..... 1.30
Choice of One: Snowflaked or Country Fried Potatoes, Cut Buttered Broccoli, Stewed Tomatoes or Salad
Soup - Boston Clam Chowder..... .30 & .45

MONDAY
Pork Chop Creole Style with Rice..... 1.45
Turkey, Macaroni and Creamed Cheese Casserole..... 1.30
Choice of One: Whipped or Hashed Brown Potatoes, Harvard Beets, Green Peas or Salad
Soup - Beef and Noodle..... .30 & .45

DAILY SPECIALS
INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE..... 1.80

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP..... 1.10

DAILY DIET SPECIAL

(Chef's Choice) - Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg..... 1.50

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HOF BRAU MENU
(Sandwich with Choice of French Roll or Bread)

DAILY Rare Roast Beef, Pastrami, or Corned Beef..... 1.65

TUESDAYS Ham..... 1.65

THURSDAYS Turkey..... 1.65

Sausage Sandwich on French Roll..... 1.05

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AN ASSORTMENT OF SALADS, INCLUDING SHRIMP LOUIE..... 1.60
AND CHEF'S SALAD (are available)..... 1.45

October 17, 1978 thru October 23, 1978

A LA CARTE MENU

TUESDAY
Spring Lamb Stew with Dumplings..... 1.45
Hot Dog Enchiladas..... 1.30
Choice of One: Snowflaked Potatoes, Rice Pilaf, Green Peas, Buttered Zucchini or Salad
Soup - Chicken Gumbo..... .30 & .45

WEDNESDAY
Roast Pork and Dressing, Glazed Apples..... 1.45
Turkey Pot Pie Biscuit Topping..... 1.30
Choice of One: Mashed Potatoes, Yams, Cut Broccoli, Carrots or Salad
Soup - Old Fashioned Navy Bean..... .30 & .45

THURSDAY
Bar-B-Que Beef over Rice..... 1.45
Stuffed Sweet and Sour Cabbage Roll..... 1.30
Choice of One: Snowflaked or Au Gratin Potatoes, Corn O'Brien, Cut Broccoli or Salad
Soup - Fresh Vegetable..... .30 & .45

FRIDAY
Sole Alamandine..... 1.45
Macaroni and Cheddar Cheese Omelette..... 1.30
Choice of One: Whipped or Parsleyed Potatoes, Baby Gr. Lima Beans, Buttered Spinach or Salad
Soup - Fulton's Market Clam Chowder..... .30 & .45

MONDAY
Turkey Cornetts and Rice..... 1.45
Baked Polish Sausage and Red Cabbage..... 1.30
Choice of One: Snowflaked or Scalloped Potatoes, Green Beans Alamandine, Harvard Beets or Salad
Soup - Tomato, Macaroni and Onion..... .30 & .45

DAILY SPECIALS
INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE..... 1.80

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP..... 1.10

DAILY DIET SPECIAL

(Chef's Choice) - Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg..... 1.50

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HOF BRAU MENU
(Sandwich with Choice of French Roll or Bread)

DAILY Rare Roast Beef, Pastrami, or Corned Beef..... 1.65

TUESDAYS Ham..... 1.65

THURSDAYS Turkey..... 1.65

Sausage Sandwich on French Roll..... 1.05

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AN ASSORTMENT OF SALADS, INCLUDING SHRIMP LOUIE..... 1.60
AND CHEF'S SALAD (are available)..... 1.45

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ARA ACTIVITIES

This year's Ames Children's Christmas Party is in the planning. A request is now going out for volunteers; employees at Ames, dependents or retired personnel to help out as Santa's helpers, balloon girls, or work in the gift shops, refreshment stand, moon walk, ticket group, or wherever you think you could assist. If you would like to help with this worthwhile event for the young children, please notify Clara Johnson, extension 6035/M.S. 233-13. Remember that about 2000 children attend this party and they get the same excitement and joy out of it as we used to get at Christmas parties. It took adults, old and young, to make those school, church, and community Christmas parties exciting, joyful, and memorable in those days for us as it does now for the children of today. The only thing different now is *we* are the "biggies" that still make it happen. Your help would be greatly appreciated.

Corporate memberships at Wallbangers Racketball Centers have been reopened. Membership rules and (alas) prices have been changed from last year's program. In short, the discount has been decreased to 35%; reservations at a member's home court can be made seven days in advance, but reservations at other courts can be made only six days in advance; and members must mail the membership fee plus a discount coupon to the home court of their choice.

A complete explanation of fees and house rules can be obtained at the ARA Store. Discount coupons and answers to questions can be obtained by calling Herb Finger, x6598.

NASA intercenter jogging comp...

The fall competition between NASA centers will be held in the week of October 22-27; distances are 2 miles and 10 km (6.21 miles). Events are open to employees of Ames and Ames contractors, affiliates, and co-op students. New runners are welcome. Participants in the spring competition will receive information by mail. To get on the mailing list or to report address changes since spring, send name and mail stop (and birth date if new participant) to JOGGERS, Mail Stop 234-1.

Security notice

JOGGERS BEWARE: Joggers are reminded that if they are using a center street without a sidewalk, they are required to use the left side of the road so as to face oncoming traffic. Joggers must remain aware of traffic flow and move onto the shoulder to avoid oncoming traffic. During early morning and evening hours, drivers are facing direct sunlight much of the time and may not be able to see you in time to take evasive action.

Jogging is an excellent conditioner and contributes to a healthy body, but remember, getting hit by a vehicle is definitely hazardous to your health!

Golf

Tournament chairman Dave Banducci reports the following winners for the point-par tournament held at Spyglass Hill on September 23.

1st Flight: I-R. Norman, 2-L. Collins, 3-L. Hochstein, 4-Tie: O. Koontz and F.O. Johnson.

2nd Flight: I-R. DeConti, 2-Tie: D. Dust and A. Llamas, 4-Tie: E. Mitz and N. McFadden.

3rd Flight: I-J. Pogue, 2-D. Van Sickle, 3-C. McCloskey, 4-G. Rathert, 5-Tie: D. McMurchy, I. Rathert, J. McCloy.

Closest to Pin: #3 R. DeConti, #5 N. McFadden, #12 F.O. Johnson, #15 I. Rathert.

NASA SPECIAL PUBLICATIONS

National Aeronautics and Space Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

NASA SP-427 HIGH ALTITUDE PERSPECTIVE
Prepared by NASA Ames Research Center

Design and performance data and mission capabilities of the Ames Research Center's U-2 aircraft – available on a cost-reimbursable basis for research and experimental programs – are summarized for the prospective user. The aircraft, the sensors it incorporates or can accommodate (photographic and nonphotographic), and data handling provisions are described. Potential applications include Earth resources inventories, remote sensing data interpretation, electronic sensor research and development, satellite investigative support, stratospheric gas studies, and astronomy and astrophysics.

NASA SP-8121 LIQUID ROCKET ENGINE TURBOPUMP ROTATING-SHAFT SEALS
Prepared by NASA Lewis Research Center, Cleveland Ohio

A summary of accumulated experience and knowledge, derived from development and operational programs, is presented in this review of successful design techniques and practices related to seals for the rotating shafts of liquid propellant rocket engine turbopumps. Published in the interest of identifying uniform criteria for space vehicle design, this monograph is one in a series related to chemical propulsion technology. (Similar monographs, all listed in an appendix, pertain to three other technology areas: environment, structures, and guidance and control.) Various characteristics of seal systems and components are cross-referenced between a section on the state of the art, in which the total design problem is reviewed and discussed, and a section on design criteria, in which design rules, criteria, standards, and limitations are described. A glossary, conversion factors, and references are included. (Not a set of specifications or a design manual.)

NASA SP-4011 SKYLAB – A CHRONOLOGY
By Roland W. Newkirk and Ivan D. Ertel with Courtney G. Brooks

A comprehensive (462 pp.) review of the Skylab Program, which was undertaken to conduct a series of experiments outside Earth's atmosphere, is provided in this three-part chronology of the period from Oberth's 1923 proposal for a manned space station through Program activities of 1974. The three principal parts of the chronology – early space station activities, Apollo applications, and Skylab development and operations – are supplemented by eleven appendixes. The appendixes include a glossary of abbreviations and acronyms; a summary (in tabular form) of the Skylab Program; discussions of extravehicular experiments and repair and maintenance procedures; a list of potential tasks for a space laboratory; and information on program funding, contractors, and organization. Program experiments are described in detail in a separate appendix which identifies investigators, kinds of experiments, purposes of experiments, and results and findings.

NASA CP-6 APPLICATION OF REMOTE SENSING TO THE CHESAPEAKE BAY REGION,
Volume 2 – Proceedings
Editors: W. T. Chen and G. W. Freas, Jr., Goddard Space Flight Center;
G. D. Hickman, D. A. Pemberton, T. D. Wilkerson, and I. Adler, University of Maryland;
V. J. Laurie, Environmental Protection Agency

The proceedings of a conference – jointly sponsored by NASA, the Environmental Protection Agency, and the University of Maryland – devoted to the application of Landsat and other remote sensing technologies to land-use planning, water-quality and eutrophication monitoring, and a variety of other environmental conditions related to Chesapeake Bay are presented. The conference, held in West Virginia from April 12–15, 1977, was planned and organized to encourage more effective coordination of federal, state, and private organizations concerned with pollution, erosion, silting, and other Bay-related problems. Conference papers cover the role of remote sensing in resolving Bay problems, resources of the Bay region, and pollution problems. Reports of conference working groups and discussions of resources that can be brought to bear are included. An appendix presents a report which deals with how the conference came to be and with the communication processes that affected its design.

NASA SP-7041(17) EARTH RESOURCES – A Continuing Bibliography with Indexes, Issue 17
Prepared by NASA Scientific and Technical Information Office, Washington, D.C.

This seventeenth issue in a continuing bibliography contains 775 entries of reports and other publications – related to the identification and evaluation, by means of sensors in spacecraft and aircraft, of vegetation, minerals, and other Earth resources – announced between January 1 and March 31, 1978 in *Scientific and Technical Aerospace Reports* (STAR) and *International Aerospace Abstracts* (IAA). STAR and IAA listings, including abstracts, are grouped in nine categories that comprise agriculture and forestry; environmental changes and cultural resources; geodesy and cartography; geology and mineral resources; oceanography and marine resources; hydrology and water management; data processing and distribution systems; instrumentation and sensors; and a general subject area. Availability of the publications cited and indexes of subject matter, personal authors, corporate sources, contract numbers, and report/accession numbers are included.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-152	Secretary (Steno)	GS-5/6	LX	Centerwide & Outside	10-13-78
78-163	Supply Technician	GS-7/8	FOI	Centerwide & Outside	10-20-78
78-164	Supv, AST Fluid & Flight Mechanics Chief, Applied Computational Aerodynamics Branch	GS-14/15	STA	NASA-wide & Ames Army	10-27-78
78-165	Supv, AST Fluid & Flight Mechanics Asst. Chief, Applied Computational Aerodynamics Branch	GS-13/14	STA	NASA-wide & Ames Army	10-27-78
78-166	Personnel Management Specialist (2 positions)	GS-11/12	APM	Centerwide	10-20-78
78-167	Research Instrument Maker	WG-11/12	RSM	Centerwide & Army	10-27-78
79-1	Research Aircraft Inspector	WG-14/15	FOI	NASA-wide & Outside	10-20-78
79-2	Supply Cataloger	GS-7/9	AAP	Centerwide	10-20-78
79-3	Procurement Clerk (Typing) or Clerk-Typist	GS-4/5 or GS-3/4	ASB	Centerwide & Outside	10-20-78
79-4	Library Technician (Temporary promotion)	GS-7	ATL	Centerwide	10-20-78
79-5	Procurement Clerk (Typing) or Clerk-Typist	GS-4/5 or GS-3/4	ASF	Centerwide & Outside	10-20-78

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-157	Secretary (Typing)	SPJ	Cancelled
78-137	Model Maker	RSC	DeWitt, James C.

Want ads

Transportation

1977 Dodge Maxivan Camper, Bizi Bodi top. Sleeps 5; AT, PS, PB, AC, cruise, 360V8, AM/FM/8-track, steel radials, GOOD gas mileage. Like new. 252-6982.

- - - - -

1958 Buick 4-dr. Special. Collector's car. Excellent interior, body, paint and chrome; new battery and tires, rebuilt transmission. $1650 and drive it away. Call Pete (408) 354-2682 or George (415) 343-9730.

- - - - -

1962 Ford Falcon, less than 65,000 miles, original owner. New tires. 328-1479. A classic???

- - - - -

'77 Camaro, LT, AT, PS, PB, AC, Tach, Spoiler mag wheels, AM/FM, 8-track stereo, 4 speakers. Spotless. $5995.00. 244-5644 after 5 p.m.

- - - - -

For Sale: '67 Buick Skylark V8, one owner, excellent condition, low miles. $850. Evenings 867-0706.

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'72 Chev., Chevelle Malibu, auto, PS, air, V8. $1000. 961-6669.

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1972 MG Midget, very good cond. 50,000 mi. $1700. Call 253-3989 after 4:15.

'71 AMC Matador station wagon. New transmission w/1 yr. guarantee, new tires, mags, A/T, P/B, original owner, clean, good condition. $850. Call after 6 p.m., 739-5373.

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'73 Pontiac Le Mans, P/S, P/B, air, CB, AM/FM, 400 cubic in., 4-speed. 966-5942 bet. 8-4:30; 969-7280 after 4:30.

- - - - -

1971 Pontiac Bonneville A/C, all power, 455 cu in., pre-smog. Bluebook. Call eves. 941-2622.

- - - - -

1970 Olds. Toronado; power windows, steering, brakes; front wheel drive; 455 cu in. engine; less than 90,000 miles. $2000.00. Call after 6 p.m. 629-1178.

Housing

FOR RENT: Beach house at Pajaro Dunes (near Watsonville). Completely furnished, incl. linens; cleaning included in rent; beautiful views of Monterey Bay, 100 ft. from beach; tennis courts. Reserve now for Fall and Winter. Call John Lundell, 252-7260.

- - - - -

FOR SALE: Ocean-view lot at Sea Ranch. $31,000. Call Randy at Ext. 5452.

FOR SALE: Milpitas foothill estates, 2-story 5 br/2½ ba, w/w carpets, AEK, double-oven stove, dishwasher, central air, fully insulated, inside laundry, 2+car garage, lots of storage. $89,950. Call Al at work, 965-6513 or home, 262-9070.

- - - - -

Miscellaneous

MAGNAVOX 8-speaker stereo phonograph system with FM/AM radio—in 2 matching oak cabinets (30" high, 23" wide, 16½" deep). 20-watt, 2-channel amp, 15" bass, 8" mid-range, plus 2 5" treble speakers. Precision Magnavox record changer with diamond stereo pick-up. Space for 125 records; excellent condition. $95. Call 734-3056.

- - - - -

40-gal. aquarium including filter, pump, light, rocks, plants, and stand. Ready for use, $80. 10-gal. aquarium with filter and gravel, $10. Phone 238-2648.

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3/4 size violin with 2 bows and case. German-made and recently reconditioned. $75. From a '67 VW bug, running boards, bumper and engine cover. Call 739-9124.

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Set of 4 matching antique dining chairs, $160. New oval mirrored medicine cabinet, $35. 41"x60" aluminum sliding window, $25. Also, Skis, 195 cm K2 with step-in bindings, $45. Call 252-4284 after 5 p.m.

- - - - -

RIDE WANTED: New employee will be needing ride from vicinity of Grant St. & Delaware in San Mateo, 8-4:30 shift. Please call Marilyn Garis at Ext. 5617 if you can help.

- - - - -

Burl Clock—beautiful grain structure, about 36" diagonal dimension. Reliable clock mechanism, $50. Sofa, including twin-bed mattress on a wood frame and 4 bolsters. Black/white hound's tooth pattern. $75. Call 253-3903.

- - - - -

NEED RIDE to and from Ames. Live in vicinity of Central Expressway & Rengstorff. Can begin work from 6:30 to 7:30 a.m. Call George at 965-6385.

- - - - -

Child's rocking horse, good condition. $10. Child's bed, $15. Call 657-4247 after 6:00 p.m. and weekends.

- - - - -

O'Keefe & Merritt Microwave oven w/browning dish. $150.00 or best offer. Dinette Set: 6 chairs, 2 leaves. $100 or best offer. Call Irene Daniel, 739-2489.

- - - - -

WINNEBAGO 22', 1970; 21,500 miles on rebuilt motor, 1975. P.S., P.B., roof air, generator, roof rack, awning, refr/freezer, sleeps 6, self-contained, new dual exhaust, 318 engine. Call 264-8303.

- - - - -

Regulation-size slate-top pool table, 2 cues and balls included. Fair cond. $100.00 or best offer. Four-drawer chest by Bassett—dark pine, new cond. $60.00. Call 732-8362.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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The Astrogram

VOLUME XX NUMBER 26

October 16, 1978

CFC Division Captains visit four service agencies

On October 3 and 4, several Ames CFC Division and Office Captains visited four United Way-supported service agencies as a part of precampaign activities. The agencies visited were Hope Rehabilitation Services, the American National Red Cross, Goodwill Industries of Santa Clara County, and Pathway Society, Inc.

Hope Rehabilitation Services provides comprehensive services for people handicapped by mental retardation, serving about 850 families daily. Hope also serves persons with a wider range of disabilities, including the mentally ill and the orthopedically handicapped. This agency is recognized as among the top rehabilitation services in the United States. It is funded only in part through United Way. A portion of funding is received from the State, and additional support is obtained from fees charged on a sliding scale based on ability to pay.

The American Red Cross provides a broad spectrum of services including Family and Community Disaster Services, Services to Military Families, Aid to Victims of Crime, Safety Programs, and the Regional Blood Program. United Way funds plus an annual Red Cross Membership drive provide most of the support for Red Cross programs except for the Regional Blood Program. The latter is substantially self-sustaining as blood processing costs are recovered through a charge assessed by the hospitals and clinics administering blood products to patients. All disaster services are provided at no cost to recipients. Fees are charged for safety classes (first aid, water safety and small craft and cardiopulmonary resuscitation) in order to recover costs for expendable classroom materials.

The objective of Goodwill Industries of Santa Clara County is to rehabilitate, vocationally train, and place handicapped people in jobs that both use and challenge their abilities. Job placements are with business and industry in Santa Clara County. Services provided are vocational evaluation, vocational training, work adjustment, work experience, placement services and general medical services. In addition to funds from United Way, Goodwill Industries derives funds from fees charged for services, profits from its contract services department, and state and federal grants.

The objectives of Pathway Society are to provide for rehabilitation of abusers of substances (i.e., drugs and chemicals), and prevent substance abuse through education and research. This agency operates two residential facilities to treat addicted persons in a residential setting. An outpatient service, primarily to assist Juvenile Probation and other agencies with preventive programs, is also provided. Funding for these services is derived in part from United Way, and through state and federal drug abuse programs.

Further information on these and other United Way agencies is available. If interested, contact Ben Briggs (ext. 5897) or Tom Tomberlin (ext. 5802).

1978 Combined Federal Campaign begins at Ames

The 1978 Combined Federal Campaign (CFC), the once-a-year fund solicitation in all federal organizations to support local, national, and international service agencies, began on Monday, October 2. By now you will have seen the outdoor signs and the posters on your bulletin boards. Many of you have already been contacted by your Branch solicitors for your donations.

To many, the reasons for contributing to the more than 100 human service agencies through the CFC seem obvious. We do it every year. As a matter of fact, 91% of Ames employees contributed last year. The extent of Ames employees' giving has been outstanding – exceeding 25% of total Santa Clara County CFC contributions with only 10% of the county federal employee population. However, the need for the service provided by the more than 100 service agencies supported by the CFC continues to increase, and their costs have been hit by inflation as well.

The Ames goal this year, which has been endorsed by C. A. Syvertson, Ames Director, is for an increase in total giving of 13%, with an increase in employee participation from 91% (last year) to 95%. This goal can be achieved if each of us does his or her part.

Information on the CRC is available in the CFC brochure handed to each of you by your campaign solicitor. Further information is summarized in this special issue of the Astrogram, some taken directly from the CFC brochure. If you have questions or concerns not touched upon, feel free to call your Division or Office Captains, or the Campaign Coordinators, Ben Briggs (ext. 5897) and Tom Tomberlin (ext. 5802).

ARC employees listen to Hope International instructor explain the goals of Hope. Left to right are Dick Kurkowski, Hallie Funkhouser, Knapp A. "Tom" Tomberlin, Jeri Weathersbee and Michael Orozco.

How much should I give?

How much should I give? While none of us expects to be told how much to give, this is a question we are likely to ask ourselves as we prepare our CFC pledges. Those of us who have received help through agencies supported by the CFC, or know people who have, may have a clearer picture of our responsibilities. A complicating factor is the responsibility we may have to support our churches. However, most churches are not engaged in providing the kinds of services available through the agencies supported by the CFC, so we must come to terms with the need to support both our churches and the CFC. While no "quotas" or "assessments" are ever stated, one percent of income has been suggested as a responsive gift to the CFC.

Last year, Ames employees contributed a total of $64,281, which is 30% of the total amount pledged by all federal employees in the county. The average gift was $44.26. It seems that Ames employees are well aware of their responsibilities to the community.

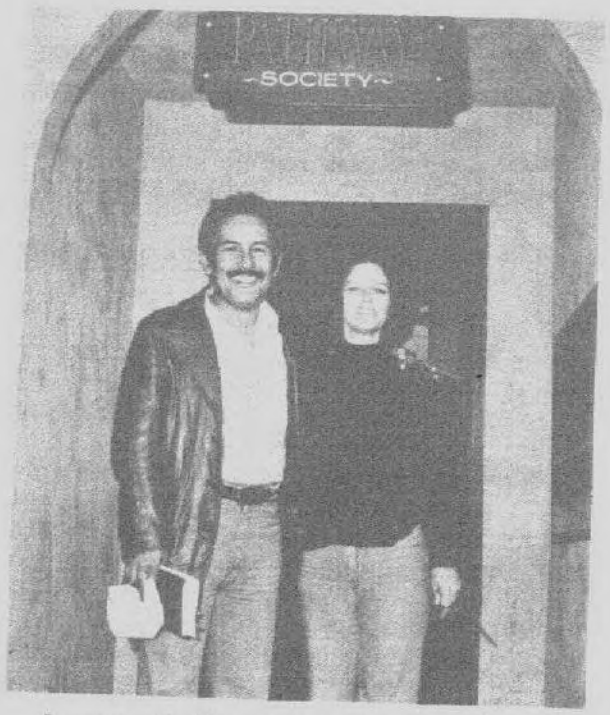
How is my money distributed?

All funds are paid to a central receipt and accounting point, namely the Santa Clara County United Way, and are distributed in accordance with the formula agreed to by the participating agencies and approved by the CFC Coordinating Committee. Employee representatives of several local federal offices serve on the committee.

Federal regulations requires that a historical formula be used to establish dollar bases for the distribution of undesignated funds. Accordingly, for the CFC in Santa Clara County, the dollar base for the International Service Agencies is established at 5.4%, the National Health Agencies at 16.6% and the United Way of Santa Clara County at 78.0%. The regulations also specify that all designations be credited to the agency group dollar base first, and then undesignated funds are added to fill the base.

Last year, the United Way of Santa Clara County received $212,172; the National Health Agencies, $45,795, and the International Service Agencies received $14,689.

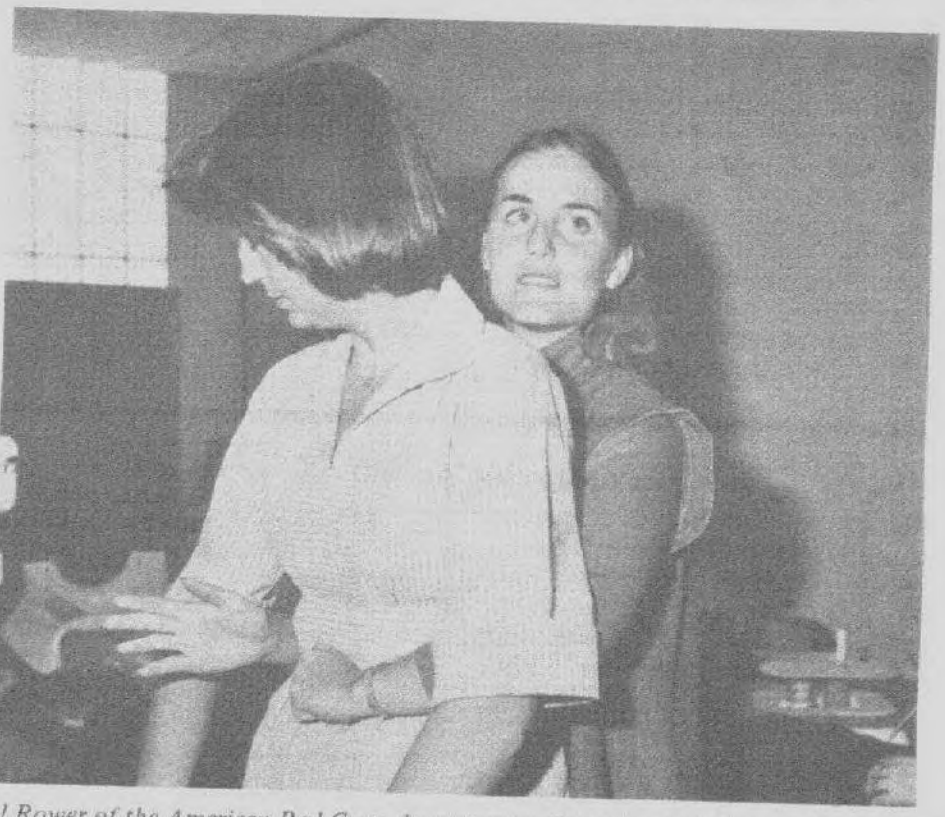
Hope International's trainee Gayle Schell (far right) poses with instructor Linda Schroder and ARC employee Jeff Canclini.



Lawrence Aguilar and Starla Roads welcome ARC visitors to Pathway Society.

CPR instructor Carol Rower demonstrates mouth to mouth resuscitation.

Pathway Society employees (left to right) Rich Allino, Starla Roads and Marlene Gunion discuss how they will handle the Ames visitation.



Carol Rower of the American Red Cross demonstrates life saving technique on Renee Oliver.

Sandy Ellison, Director of the Blood Bank, poses with ARC employee Sal Tardio on the recent tour.

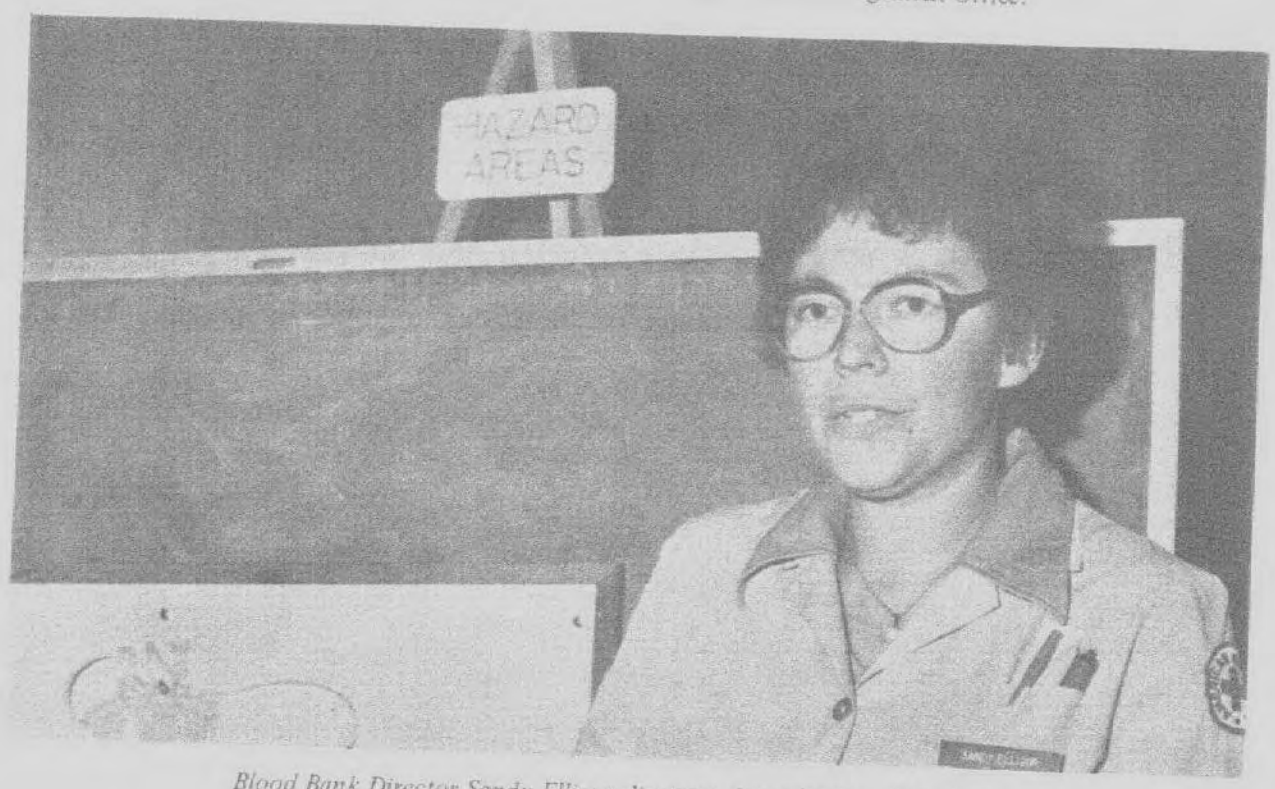
Loaned executives

Starting in late August, the local United Way conducts an intensive course of training in fund-raising methodologies for some 20-25 "loaned executives." A loaned executive is a senior person having extensive managerial experience who is "loaned" by a local business or government office for the duration of the campaign (about two months of full-time effort). The loaned executives from business and industry become "account managers" to solicit funds from blocks of businesses throughout the county. The federal loaned executive manages the more than 50 "federal accounts" associated with the CFC. The first federal loaned executive served in 1975. All (1975, 1976, 1977, and 1978) have been from Ames Research Center. This year's loaned executive is C.J. Fenrick, of the Resources Management Office.

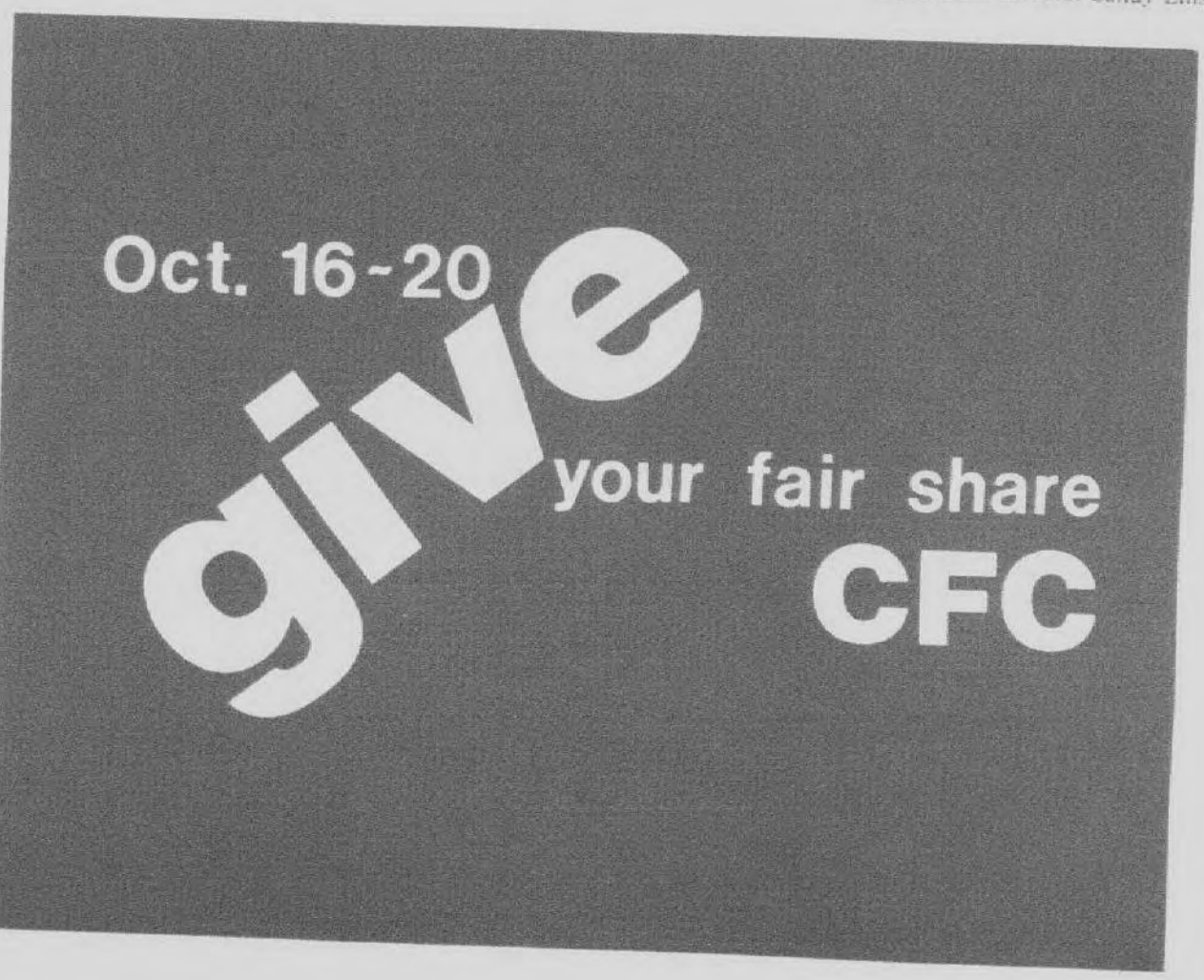
Why payroll giving?

Federal organizations are authorized to make payroll deductions for CFC contributions. The CFC is unique in the respect that United Way, National Health, and International Service Agencies are included in the drive. This is different from the United Way Campaign conducted annually in local business, and in city, county, and state governments, which generally includes only the United Way agencies. Thus, we have the opportunity to make a single pledge covering nearly all charitable and service agencies that operate in Santa Clara County.

The use of the payroll deduction method is voluntary and optional. Contributions can be made in a one-time cash gift. However, the advantage of a payroll pledge is the ability to spread the gift over many pay periods. The payroll deductions for CFC contributions is entirely voluntary, and is encouraged by the Federal government.



Blood Bank Director Sandy Ellison discusses the operation of the bank.

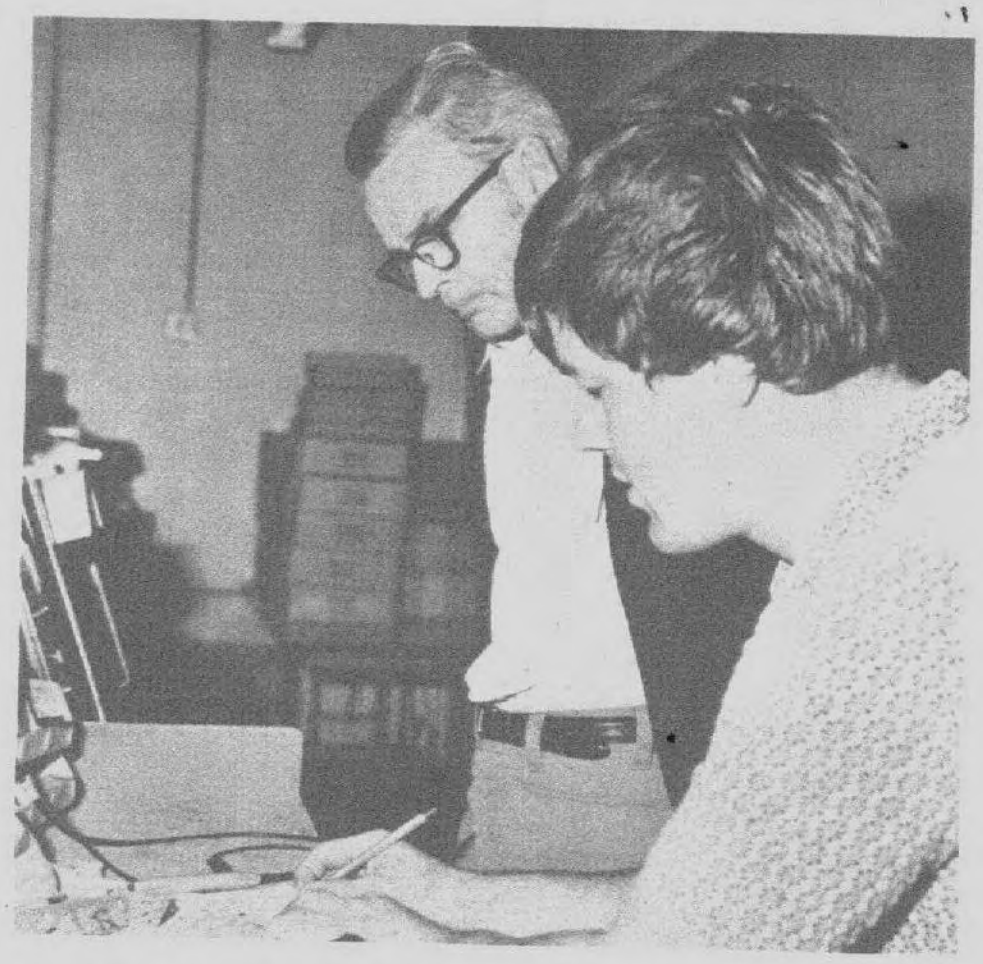


Campaign costs

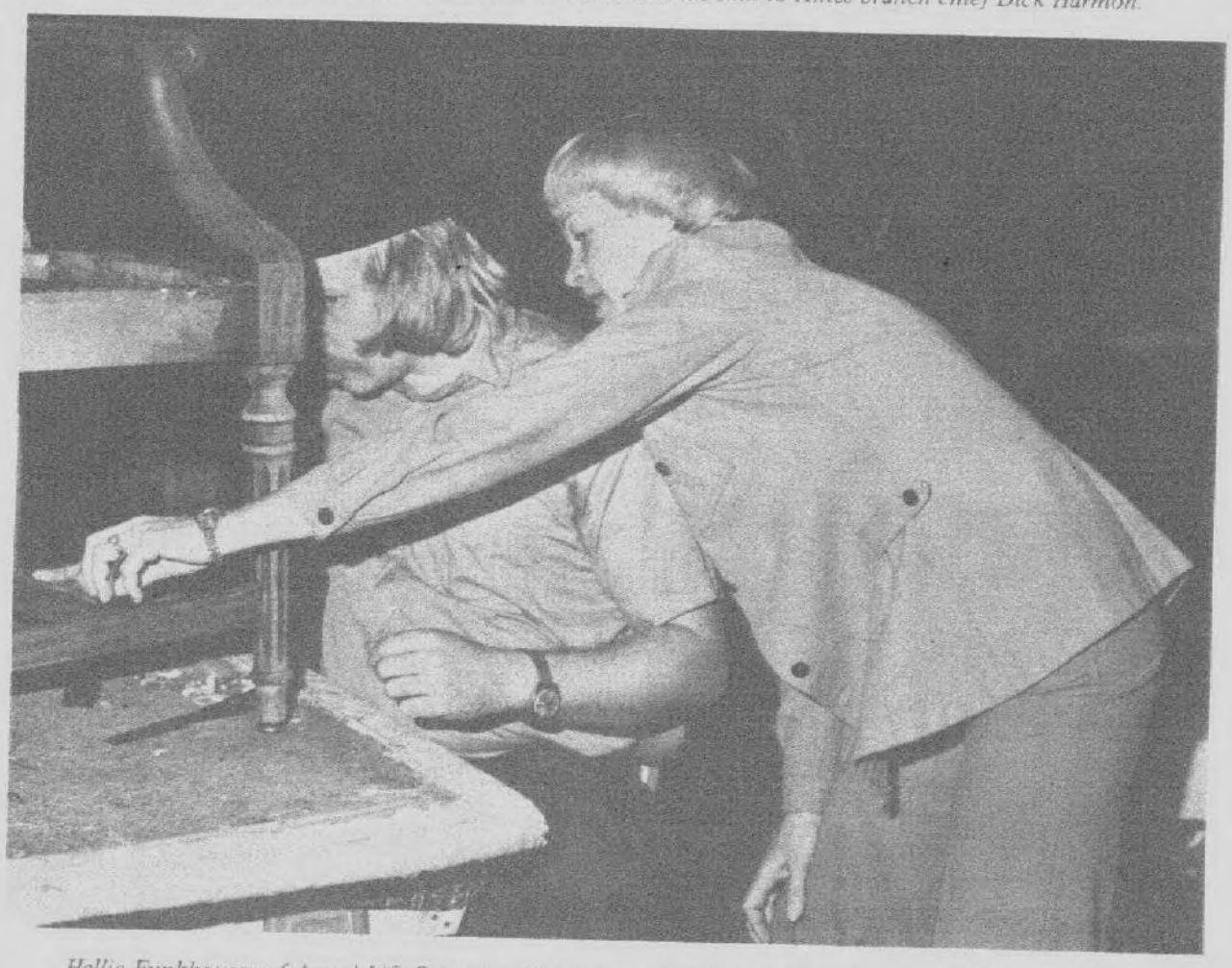
The 1977 CFC Campaign costs in the County amounted to 4.2% of receipts, all for identifiable items such as printed campaign materials, award plaques and central accounting and auditing services. A small portion of the salaries of United Way permanent staff who assist in campaign management is also included. The annual operation costs for the local United Way office amount to about 6.0% of gross United Way receipts.

The National Health Agencies are, typically, involved in research and dissemination of information as well as programs of direct human care. Obviously, all local areas benefit from the national research programs regardless of where the research is conducted. While precise data are not available, more National Health Agency funds are expended in the County than are collected here, due primarily to extensive programs of research conducted in Bay Area hospitals and universities. These agencies typically conduct yearly membership/fund campaigns, as they do not ordinarily participate in the local United Way Campaigns. Total fund-raising costs for these agencies are 20-30% of total receipts, as compared to the local CFC and United Way cost of about 4-5% of receipts.

The International Service Agencies solicit funds through a variety of methods in addition to the CFC solicitations. Their overall campaign costs are 10-15% of collected funds.



Walt Capson of the Goodwill Industries demonstrates his skill to Ames branch chief Dick Harmon.



Hallie Funkhouser of Ames' Life Sciences asks for more details as to the refinishing techniques of Goodwill employee Gary Weingarten.

Impact of CFC gifts on the community

The impact of CFC gifts on the community can be appreciated only in a small way by looking at statistics. A few examples, relating primarily to United Way activities during the past year, are:

- 660 disabled people were trained for paying jobs in industry through Goodwill Industry's Rehabilitation Program.
- 10,450 people received family and disaster aid from the Santa Clara Valley Chapter of the American Red Cross. Another 29,800 people were served by the Chapter's safety programs, including courses in cardiopulmonary resuscitation and first aid.
- 687 lonely people, many of them residents of rest homes, were matched with "friends" who visit them on a regular basis through the Friendly Visiting Service of the Council of Churches.
- 1,000 senior citizens enjoyed activities of two senior centers operated by Catholic Social Service.
- 49,526 home visits were made by the Visiting Nurse Association. Their programs include nursing, physical therapy, speech therapy, occupational therapy, home health aid and medical social work.
- 10,695 people received help through the various programs of the Family Service Association of Santa Clara County and the Family Service Association of the Mid-Peninsula. This included 2,100 phone calls from desperate parents to the Parental Stress Hotline housed in the Mid-Peninsula office.
- 1,036 developmentally delayed and handicapped people were served by Hope Rehabilitation Services. Of those, 407 were employed in sheltered workshops, working on industry contracts and maintaining their sense of dignity as participating members of the work force.
- 3,700 women in our community attended workshops and programs to learn how to protect themselves against rape. Included in the total figure are the number of women who actually sought help through peer counseling at the Rape Crisis Center.
- Two community agencies are receiving first-time United Way funds during fiscal '78-'79. The Adult Independence Development Center provides services to disabled adults to assist them in developing the skills needed for independent living. The Center for Living with Dying provides counseling, emotional support and other services to meet the needs of the dying and their families and friends.
- 759 adult women sought emergency shelter at Brandon House, operated by Volunteers of America. In addition, Brandon House provided emergency shelter for 642 children and 167 infants who came for shelter with their mothers. Of those women who sought help, 25% were physically battered and 55% were abused.

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The Astrogram

VOLUME XXI NUMBER 2

November 2, 1978

Outstanding Performance Awards to Ames Employees

Center Director C. A. Syvertson recently presented Outstanding Performance Awards to the following Ames employees: William Berry, Biosystems Division; Bruce Castle, Resources Management Office; Richard Couture, Contract Management Branch for Research Support; Renwick Curry, Aviation Safety Research Office; Sanford Davis, Aerodynamics Research Branch; Ronald DuVal, Helicopter Flight Investigations Branch; Lisbeth Kraft, Biosystems Division; Ruth Mack, Extraterrestrial Research Division; Louise Mahaffie, Helicopter Technology Division; Kenneth Mort, Large Scale Aerodynamics Branch; Walter Nelms, Aircraft Aerodynamics Branch; and Donald Peeler, Medical Services Office.

Pictured above are (left to right): Center Director, C. A. Syvertson; Walter Nelms, Louise Mahaffie, Richard Couture, Ruth Mack, Bruce Castle, Kenneth Mort, and Ronald DuVal.

Galileo Memorial Scholarship

Applications are now available for the 1979 AIAA/ARC Galileo Memorial Scholarship. The Galileo Memorial Scholarship is open to high school seniors who intend to pursue a career in engineering, mathematics, or the physical or natural sciences and who are either residents of San Francisco, San Mateo, Santa Clara, or Santa Cruz County or children of Ames Research Center career employees, retirees, on-site support service contract employees or Galileo crew members.

The Scholarship Program was established in 1973 by the San Francisco Section of the American Institute of Aeroquatics and Astronautics and Ames Research Center as a memorial to the men who perished with the Galileo I in an accident on April 12, 1973. The Galileo I, as its replacement Galileo II, was a Convair 990 aircraft, modified and operated by Ames as an airborne laboratory for research in aeronautics, astronautics, astronomy, and earth observations. One $750 scholarship will be awarded, and at least four other finalists will receive $100 Savings Bonds.

The selection committee will determine the winner of the scholarship on the basis of the following items:

1. An essay, limited to 1200 words, which describes the career that the applicant intends to pursue and the proposed course of study.
2. Scholastic record as determined by grade-point average and Scholastic Aptitude or other college entrance test scores.
3. Letter of recommendation from a faculty member who has personal classroom knowledge of the applicant's abilities.
4. Interview of finalists by the Selection Committee.

Applications and further information may be obtained by contacting the Scholarship Program Chairperson, Mamoru Inouye at Ext. 5126. Deadline for applying is February 28, 1979.

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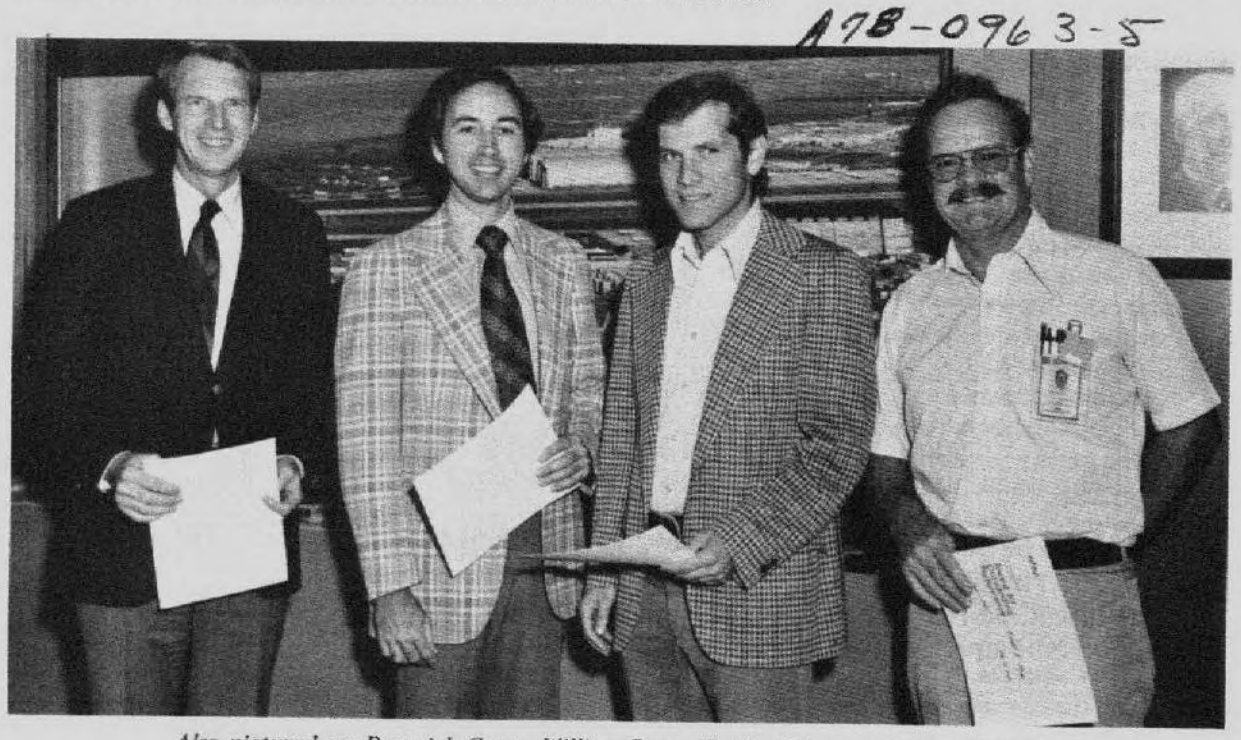


Also pictured are Renwick Curry, William Berry, Sanford Davis, and Donald Peeler.

NASA Deputy Administrator to present Honor Awards

On Friday, November 17, NASA Deputy Administrator, Dr. Alan Lovelace, and Center Director, C. A. Syvertson, will present the NASA Honor Awards to the following recipients: Exceptional Scientific Achievement Medal, Alvin Seiff; Exceptional Service Medal, Gregory W. Condon, Donald L. DeVincenzi, Lionel L. Levy, Jr., Kenneth L. Orloff, and Samuel White; Public Service Group Achievement Award, QSRA Project Team (Boeing Commercial Airplane Company).

In addition to the above awards, a NASA Group Achievement Award will be presented to the Cosmos 936 group. The awards presentation will take place in the main auditorium, Building 201 at 10 a.m.

SSP Awards

A78-0975

During a recent ceremony at Ames Research Center, Mr. Loren G. Bright, Director of Research Support, presented to four employees letters in recognition of sustained superior performance from the Center Director, Mr. C. A. Syvertson, along with monetary awards. Pictured above are, left to right: Mr. William L. Crawford, Mathematician, Systems Development Branch; Mrs. Mary Ellen Casady, Secretary, Electronic Instrument Development Branch; Mr. Loren G. Bright; Mr. Charles E. Garner, Chief, ADP Management Office; and Charles S. Ritchie, Administrative Specialist, Institute for Advanced Computation.

ITEST conference

The Institute for Theological Encounter with Science and Technology (ITEST), in cooperation with NASA, will sponsor a conference on "The Social Contract Between the Research Community and the Public," to be held November 15 from 9:45 a.m. to 12:45 p.m.

SPEAKERS:

The Development of the Present Social Contract
Dr. Donald McGuire, S.J.
History of Science
University of San Francisco

The Present Strains on the Social Contract
Dr. Steven Goldman
Philosophy of Science
Lehigh University

Alternative Models for a New Social Contract
Dr. Rustum Roy
Materials Research
The Pennsylvania State University

Contemporary scientific and technological advance – for example, nuclear power and recombinant DNA – has raised serious questions about the relationship between the research and development community and the general public.

1. Does the R and D community have an 'oversight' role in developments with a significant social impact? If so, what role?
2. Does the general public have an 'oversight' role?
3. How does the current 'mission-orientation' in R and D affect the relationship between 'science and society.'
4. How much control does the federal government exert over R and D? What should be the function of government?
5. Are there any realistic alternatives to governmental regulation of and/or control over research? If so, what?
6. Can an alliance be built between R and D community and the public as an alternative to governmental control?

Contact Mike Donahoe, Public Affairs Office for further information.

Benefits for Vets

The Administrator of Veterans Affairs of the Veterans Administration has announced a VA drive to encourage Vietnam-era veterans to use their G.I. Bill education benefits. Although the drive will attempt to reach as many veterans as possible throughout the country who have not utilized their VA educational assistance benefits, the campaign, called "Operation Boost," will focus on eleven states with the highest number of eligible veterans.

Veterans must use their educational entitlement within ten years following release from active duty. Many veterans have let this time pass and, as a result, are no longer eligible for educational benefits. An objective of the drive is to reach those who are still within the ten-year period following discharge and have not utilized their educational assistance benefits.

Additional information and pamphlets are available from the Veterans Administration office in Palo Alto.

Annual Service Awards Ceremony

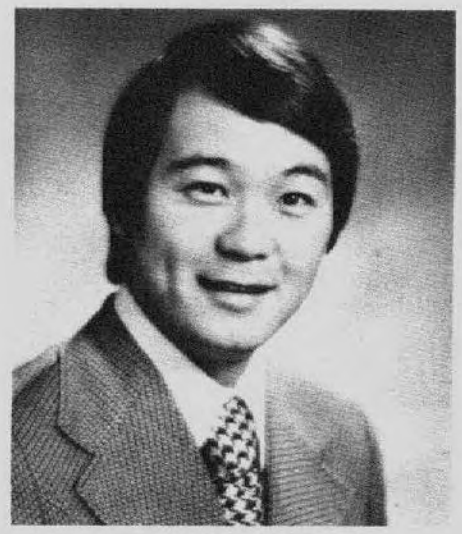
The Honorary Length of Service Awards Ceremony will be held on Tuesday, November 21 at 2 p.m. in the main auditorium, Building 201. Employees who have 20, 25, 30 and 35 years of Federal service as of October 31, 1978 will be honored. All employees and retirees are invited to attend.

Health insurance Open Season

Open Season for changes under the Federal Employees Health Benefits Program will be November 13 through December 8.

Asian American Week activities

Karl Nobuyuki, National Executive Director of the Japanese American Citizens League (JACL) will replace Dr. Harry Kitano as the speaker for Tuesday, November 7 of Asian American Week. Mr. Nobuyuki has been National Director of JACL since May 1977. He worked for the City of Gardena as Director of Youth and Community Services and as Resources Administrator following graduation from the University of Southern California in 1971. Nobuyuki is co-founder of "Go For Broke, Inc.," a self-help drug abuse program in East Los Angeles and has been involved with various other community organizations as well. His topic for Tuesday will focus on the theme of the week "Asian American Contributions to the Nation" and will take place in the main auditorium, Bldg. 201 from 12:30 to 1:30 p.m.



Karl Nobuyuki

Other activities scheduled for the week include: the kick-off luncheon on November 6 with California Secretary of State March Fong Eu as the keynote speaker and U.S. Congressman Norman Y. Mineta on Wednesday, November 8 in the main auditorium, Bldg. 201 from 12:30 to 1:30 p.m. The week will culminate with a Happy Hour on Thursday, November 9.

The talk by Mr. Kelly Kitagawa, scheduled for Thursday, has been cancelled.

FEW Meeting

The South Bay Chapter of Federally Employed Women (FEW) invites all federal (military and civilian) employees (men and women) to their next meeting on Wednesday, November 8 from 5:30 to 7:30 p.m. in the Senior Lounge Room 110 at the Community Center of Sunnyvale at 550 Remington Avenue.

The program consists of a talk by a representative from the Women's Political Caucus.

FEW was founded in 1968 by a group of federally employed women in Washington, D.C. They were interested in carrying out the intent of the President's Executive Order 11375 which added "sex" to the other forms of discrimination prohibited by Executive Order 11246 in the federal service and by government contractors.

The South Bay Chapter, active since 1975, is one of hundreds of FEW chapters throughout the United States and overseas. Membership includes employees of many federal agencies in this area (NASA/Ames, US Geological Survey, VA Hospital, Navy Department, etc.) who are concerned about equal employment opportunities in the federal service; interested in current issues affecting the status of women; willing to work with other active, aware women striving to solve the inequities in the system; interested in exploring a new career field; and looking for ways to enhance promotion potential in their present job.

Credit Union opening ceremony

A traditional ribbon cutting ceremony was held on October 19th to formally open the new Credit Union Headquarters. Assisting John Pogue, President of the Board of Directors, with the honor of cutting the ribbon, was Rear Admiral C. O. Prindle and Congressman Norman Y. Mineta. Observing the event was Captain J. M. Quin, Jr., USN, Trudie Williamson, and Lisa Whitney, MCU employees.

She jumps for joy

(Continued from last issue)

Now, as to the actual jump. This is what happens: The aircraft approaches the jump zone. This is a flat dirt stretch of farm land the club rents from a local farmer who has no objection to people dropping in on him from the sky. The jumpmaster, who is in charge of the program, tells you to get ready. You're the first one out. You crawl to the open door as there's no room to stand. You carefully grip the side of the door with your right hand and a wing strut with your left hand . . . at the same time placing your foot on a tiny step . . . and just hang there until the jumpmaster shouts GO. The aircraft has now slowed down from its over 120 mph cruise speed to around 90 mph to reduce the blast of air that hits you as you step outside the airplane. You hang on for dear life. You look down. You see toy autos crisscross the highways below. Beautiful farmlands stretch out for miles into the horizon. Then the man yells GO. You fall into space.

Your static line whips out your pilot chute and suddenly your main chute blossoms out and above your head like a huge flower. You felt no jolt . . . only a gentle tug as your chute fills with air and your harness straps take up the slack. You breathe a sigh of relief. You're on your way down . . . safely.

Now, my next job is to look for our landing site . . . marked by brightly colored crossed nylon panels that can be seen for miles.

Now that I'm clear of the plane, and hanging in space, the effect is just wonderful. You feel like superwoman flying through the air! Its exciting. And its so peaceful. Your jump plane is gone, so there is no longer any sound. Everything is so quiet, there seems to be no movement of air, and you have no sensation of speed at all. You just sort of hang there in space. It feels like it will take forever to land. So you just swing there in the air and enjoy the scenery. It's beautiful, just beautiful.

But you really come down quicker than you expect. From 2800 feet, you're down in three to five minutes . . . so you have to give your parachute direction to line up those landing site panels. You guide your chute by a steering mechanism on the parachute risers. Pull down on the right riser – and you move in that direction. Same thing for the left. But of course you're always moving forward. And with a little good luck, you land right on target.

Of course, not everything always goes according to plan. One time, we misjudged a wind drift . . . I jumped too soon . . . got blown off course . . . and came down where I was not supposed to. But there was no problem, the land was flat, no trees or brush to worry about, but I did have a good long hike back to the landing strip. And when you're weighed down with awkward jump boots, a 30-pound unfurled parachute, and a helmet, well, this is not the best way to do your hiking. However, if you plan to jump again that day, you simply stretch out your chute, and field pack it right there on the ground. If no further jumps are planned that day, you lug it back to the parachute club buildings where long wood tables make the job of packing a chute a lot easier.

Are you ever scared?

Oh, sure. Fear starts the minute I leave the house to head for the airstrip. I'm tempted to turn right around and go home. But once there, your enthusiasm takes hold and you know you're doing a fun thing. And contrary to popular notion, this is not a death wish. Its exciting, you're glad you're there, and you can't wait to get your chute buckled on, climb into the aircraft and fly away. Oh, I'm not saying I don't get a few butterflies in my stomach, and the sport does make you a bit nervous . . . but it does grow on you, and the more you jump, the more you enjoy it, and the less nervous you become.

Do you plan to continue the sport?

Sure, there are a lot of different maneuvers we haven't tried yet. I'm now about ready to try to free fall, after additional training. From there, we can go into night jumps, jumps over water . . . the opportunities are endless. And as we have about 50 club members, including four girls, with most of us in our late 20s and early 30s, the variety of parachute maneuvers open to us is unlimited.

Do you intend to get your pilot's license?

I'd sure like to, but there are so many other things I want to do. Education for one, you have to have it if you're going to get anywhere. I've got an AA Degree in Psychology, and I'm a senior at San Jose State University, which I've been attending nights since 1969, where I expect to earn a degree in Business Administration and Liberal Arts.

Five mile run

A 5-mile run is being sponsored by the Mid-Peninsula Hunger Project Committee to help end death by starvation in the world.

The run will be held Sunday, November 19th at the Crystal Springs Cross-Country Course on Hallmark Drive in Belmont (off Ralston Avenue). Registration is at 9:00 a.m., with no entry fee.

Many prizes, including turkeys, movie tickets, t-shirts and buttons will be awarded. Joan DiVita, a yoga instructor at the Redwood City YMCA, will lead warm-up exercises.

Runners are invited to have people sponsor them. All money received will be sent directly to The Hunger Project, an international organization headquartered in San Francisco. Donations are tax-deductible.

The goal of The Hunger Project is to make the end of starvation by 1997 an idea whose time has come. This is being accomplished through communication and alignment of whole individuals.

John Denver's movie, "I Want To Live" (also the title of his latest album), will be shown after the run, approximately 2:00 p.m., at the old Lincoln School (now Montessori International School), 1400 Whipple Avenue, Redwood City. This movie is one of John's contributions to The Hunger Project.

For sponsor sheets and further information, call Tom at 591-1619, or John at Ames, Ext. 6701.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
79-11	Secretary (Typing)	GS-4/5	FVT	Centerwide and outside	11-20-78
79-12	Personnel Clerk (Typing) or Clerk-Typist	GS-4/5 or GS-3/4	APX	Centerwide and outside	11-20-78

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-142	Aerospace Engineer	FAO	Cancelled
78-157	Secretary (Typing)	SPJ	Cancelled

Want ads

Transportation

1969 Aristocrat 21' S/C trailer, sleeps 6, low mileage (6,500), mint condition. 110V-12V elec. system, awning, all-copper tubing water pressure system, 4 burner (oven) gas stove, 6-cu.-ft. refrig. (gas or elec.) w/freezer; shower; many extras. $3,900.00. Call 967-6403.

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For Sale: 1970 Pontiac LeMans 2-dr. hardtop. 350 engine, 4-speed, tachometer on hood, new tires w/mag wheels. Call 245-2629 or 738-3393, eves. and weekends.

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For Sale: 1970 Volkswagon Bug. New radial tires. Runs well. $850. Call 738-3393 or 739-1883 eves. and weekends.

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FOR SALE: 1968 Mercury Cougar 302 V8. A/T, air, disc brakes. Looks and runs very well. $1350. Call 252-6489.

– – – – –

1960 Ford F-100 pickup. Very customized but running well. $300. Call 732-5569, eves.

– – – – –

'73 Maverick, 50,000 miles. Automatic trans., power brakes, 6 cylinders, tow package, new tires. All service records available. $1500. Weekday eves., 326-9498. All other times, 388-7995.

– – – – –

For Sale: 1962 Mercury Monterey—runs well. Under 1000 miles on tires. Interior in excellent shape. $300 or best offer. Call 969-0462.

– – – – –

$900/best offer. One-owner, 1966 Olds 98 luxury 4-dr. sedan. Excellent classic condition; new upholstery, rebuilt engine. Air conditioning, all power, new paint. Looks great, runs well. Good family car. Owner retiring. Call 322-8174.

– – – – –

1973 Vega Hatchback, excellent condition, extremely clean, new tires. One-family owned, low mileage, automatic. Asking $1300. Call 274-1317 or 238-2208.

For Sale: 1967 Buick Skylark V8. A/T, air, radial tires. Very clean, interior like new. $700. Call 252-6489.

Housing

FOR RENT: 3 br/2 ba house, partially furnished. Family room, AEK, fenced yard. Conveniently located. $475 mo., $200 cleaning deposit. Call 493-6127.

– – – – –

SQUAW VALLEY RENTAL – Skiing with no traffic headaches. Fully furnished condo. Sleeps 5; adjacent to lifts. Call Ray Savin, 964-2170.

– – – – –

FOR RENT: 2 br/1 ba house w/fenced backyard, patio, 2-car gar., in Evergreen Valley nr. Highway 101; 25 min. to Ames. Available Nov. 15. $375 mo. 1st, last and security. Call 238-0729 after 5:00.

Miscellaneous

For Sale: Pair Head "360" skis, 195 cm. Look Nevada Toe and Marker Rotamat Heel. $65.00. Two pairs Rieker Boots, size 9 (med.), silver. $25.00 each pair. Call (415) 323-0194.

– – – – –

FOR SALE: Macy's-brand stereo with 8-track tape deck, AM-FM radio, no speakers – $50. 9-cu.ft. freezer – $50; electric smoke detector, new – $10; prune boxes – $3 each. Will take best offer on all. Call 266-6507 after 6 p.m.

– – – – –

FOR SALE: Water bed $350. Super twin/Captain's pedestal (complete). Refrigerator, $250. GE side-by-side, yellow (gold). Whirlpool washer and dryer $100 each. Phone 371-1428.

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FOR HIRE: Having a Party? Only the best in "Big Band" sound direct from your party place. Pool pump and filter for 18' Doughboy. Also ladder. All in very good condition. $50.00. Porta-potty, never used. $20.00. Call 378-5741.

– – – – –

FOR SALE: Washer and dryer, 1972 Wards model. $200 for both or $100 each. Call 732-4587.

WANTED: Anyone interested in a Kayak river touring trip on the Colorado River during the summer of 1979. Please contact Jerry Mitvalsky. The trip would be designed around the use of "Folbot" and "Klepper" one- and two-person kayaks with spray covers. Call Ext. 6166.

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FOR SALE: Westinghouse Electric Dryer, $45. Call 738-4849.

– – – – –

Speaker System: Electro-Voice components, 15" woofers, midranges, tweeters. Excellent sound. $350.00/pair. Call 238-3849.

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For Sale: Guitar, good for beginner, $10. Bldg. 244, Ext. 5700.

– – – – –

WANTED TO BUY: Good-quality, modest-cost microscope suitable for student use. Call 738-2948.

– – – – –

For Sale: Double mattress and box springs; Hollywood headboard and footboard. $25 or best offer. Contact Tom Spalding at Ext. 5465 or 248-1281 (home).

ARA ACTIVITIES

Asian American Week Happy Hour, Thursday, November 9, 1978 from 4:30 to 6:30 p.m., Ames Cafeteria.

Spirits
Oriental foods
Entertainment
Raffle for exciting prizes

Tickets are $1.00. Contact Benny Chin Ext. 5692.

Golf

Ames Golf Tournament, Spring Valley, October 14, 1978:

1st Flight	
R. Ramos	1st
T. Ritter	2nd
F. Johnson	3rd
F. Johnson	closest to pin
2nd Flight	
G. Falkenthal	1st
D. Dust	2nd
A. Lopez	3rd
D. Dust	closest to pin
3rd Flight	
E. Levin	1st
S. Johnson	2nd
L. Holzhauser	3rd
S. Johnson	closest to pin

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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Associate Editor . . . . Marcia Kadota
Reporters . . . . . NASA Employees

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National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California 94035

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CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

NOV 13 – Aeronautics Corporate Memory Seminar Speaker: Kip Edenborough, NASA-Ames Research Center Topic: Helicopter Technology Time: 1:00–3:00 p.m. Location: N-201 Main Auditorium Extraterrestrial Res. Div. Seminar Speaker: Dr. H. Ronald Kuback, The Roche Institute of Molecular Biology, Nutley, N.J. 07110 Topic: Energetics and Mechanism of Active Transport Time: 3:00 p.m. Location: N-239 Room B-39	NOV 14 –	NOV 15 – ARA Stamp Club Meeting Time: 7:30 p.m. Location: N-235, Ames Cafeteria CTS Conference by the Institute for Theological Encounter with Science and Technology (ITEST) on the Social Contract Between the Research Community and the Public Time: 9:45–12:45 p.m. (PST) Location: N-201 Main Auditorium Contact: Mike Donahoe (415) 965-5544 for reservations	NOV 16 – San Francisco Bay Area Chapter/AHS Dinner Meeting Speaker: Charles C. Crawford, Jr. Topic: "Current Technical/ Management Problems Encountered in Development of Modern Military Helicopters" Time: 7:00 p.m. Location: Mac's Tea Room, Los Altos, CA Call: John Bull (415) 965-5425 by November 13th for reservations	NOV 17 – NASA Honor Awards Ceremony NASA Deputy Administrator Alan Lovelace and Center Director C. A. Syvertson will present the awards Time: 10:00 a.m. Location: N-201 Main Auditorium
NOV. 20 –	NOV 21 – Honorary Service Awards ceremony Time: 2:00 p.m. Location: N-201 Main Auditorium	NOV 22 –	NOV 23 – THANKSGIVING DAY – Have a nice holiday!!!	NOV 24 – Thermo- and Gas-Dynamics Div. Seminar Speaker: Dr. Stanley Rudman, Grumman Aerospace, Bethpage, N.Y. Topic: Progress in the Computation of Multishocked Nozzle Plume Flow Fields Time: 10:00 a.m. Location: N-233 Room 227
NOV 27 –	NOV 28 –	NOV 29 –	NOV 30 –	DEC 1 – If you wish to have an event announced on this Calendar, please notify Linda Mackey, Visits Coordinator, Ext. 5546, Mail Stop 253-1. She must receive the information by Wednesday between publication dates in order to meet the deadline.

WEEKEND ACTIVITIES:

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

AMES RESEARCH CENTER

October 31, 1978 thru November 6, 1978

A LA CARTE MENU

TUESDAY	Chicken Fricasse over Noodles	1.45
	Spanish Rice and Bacon	1.30
	Choice of One: Whipped or Hashed O'Brien Potatoes, Peas, Buttered Corn or Salad	
	Soup - Cream of Fresh Mushrooms	.30 & .45
WEDNESDAY	Ham Steak Hawaiian Style	1.45
	Tamale Pie Casserole	1.30
	Choice of One: Au Gratin or Whipped Potatoes, Buttered Spinach, Glazed Carrots or Salad	
	Soup - Old Fashioned Navy Bean	.30 & .45
THURSDAY	Smothered Liver with Onions	1.45
	Pork Fried Rice	1.30
	Choice of One: Mashed or Lyonnaise Potatoes, Green Beans, Cauliflower or Salad	
	Soup - Fresh Vegetable and Beef	.30 & .45
FRIDAY	Roast X-Rib of Choice Beef	1.45
	Seafood Curry over Biscuit	1.30
	Creole or Cheddar Cheese Omelette	1.30
	Choice of One: Snowflaked or Country Fried Potatoes, Cut Buttered Broccoli, Stewed Tomatoes or Salad	
	Soup - Boston Clam Chowder	.30 & .45
MONDAY	Pork Chop Creole Style with Rice	1.45
	Turkey, Macaroli and Creamed Cheese Casserole	1.30
	Choice of One: Whipped or Hashed Brown Potatoes, Harvard Beets, Green Peas or Salad	
	Soup - Cream of Potato	.30 & .45
DAILY SPECIALS	INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE	1.80
	(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP	1.10

DAILY DIET SPECIAL

(Chef's Choice)	- Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg	1.50

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HOF BRAU MENU
(Sandwich with Choice of French Roll or Bread)

DAILY	Rare Roast Beef, Pastrami, or Corned Beef	1.65
TUESDAYS	Ham	1.65
THURSDAYS	Turkey	1.65
	Sausage Sandwich on French Roll	1.05

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	AN ASSORTMENT OF SALADS, INCLUDING SHRIMP LOUIE	1.60
	AND CHEF'S SALAD (are available)	1.45

AMES RESEARCH CENTER

November 7, 1978 thru November 13, 1978

A LA CARTE MENU

TUESDAY	Pork Chop Creole Style with Rice	1.45
	Beef Enchiladas with Chili Beans	1.30
	Choice of One: Whipped Potatoes, Yams, Corn O'Brien, Cut Broccoli or Salad	
	Soup - Potage Saint Germain and Croutons	.30 & .45
WEDNESDAY	Pot Roast of Beef and Potato Pancake	1.45
	Sausage and Rice Casserole	1.30
	Choice of One: Mashed Potatoes, Rice, Cauliflower Au Gratin, Spinach or Salad	
	Soup - Tomato, Macaroni and Onions	.30 & .45
THURSDAY	Chicken Livers Saute Sec and Rice	1.45
	Baked Stuffed Bell Pepper w/Creole Sauce	1.30
	Choice of One: Snowflaked or Country Fried Potatoes, Stewed Tomatoes, Zucchini or Salad	
	Soup - Beef Barely	.30 & .45
FRIDAY	HOILDAY - VETERANS DAY	
MONDAY	Roast Leg of Lamb, Dressing & Mint Jelly	1.45
	Scalloped Turkey with Mushrooms	1.30
	Choice of One: Snowflaked Potatoes or Noodles, Buttered Peas, or Corn O'Brien or Salad	
	Soup - Broccoli Supreme or Diced Vegetables and Meat	.30 & .45
DAILY SPECIALS	INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE	1.80
	(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP	1.10

DAILY DIET SPECIAL

(Chef's Choice)	- Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg	1.50

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HOF BRAU MENU
(Sandwich with Choice of French Roll or Bread)

DAILY	Rare Roast Beef, Pastrami, or Corned Beef	1.65
TUESDAYS	Ham	1.65
THURSDAYS	Turkey	1.65
	Sausage Sandwich on French Roll	1.05

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	AN ASSORTMENT OF SALADS, INCLUDING SHRIMP LOUIE	1.60
	AND CHEF'S SALAD (are available)	1.45

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

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NASA

The Astrogram

VOLUME XXI NUMBER 3

November 16, 1978

Jack Boyd named Dryden Deputy Director

John W. Boyd, Ames Deputy Director of Aeronautics and Flight Systems, has been named Deputy Director of NASA's Dryden Flight Research Center.

The designation, which is effective January 1, 1979, was announced by NASA's Deputy Administrator, Dr. Alan M. Lovelace, the end of October.

Jack, as he is known to most of us at the Center, joined Ames in 1947 and has served in a variety of positions until being appointed to his present position in 1970.

Born in Danville, Virginia, on August 19, 1925, Jack received his B.S. degree in Aeronautical Engineering from Virginia Polytechnical Institute in 1947. He was immediately hired by NACA (Ames Aeronautical Laboratory) and moved to California after receiving his degree. Jack is a 1966 graduate of the Stanford School of Business under a Stanford Sloan Fellowship.

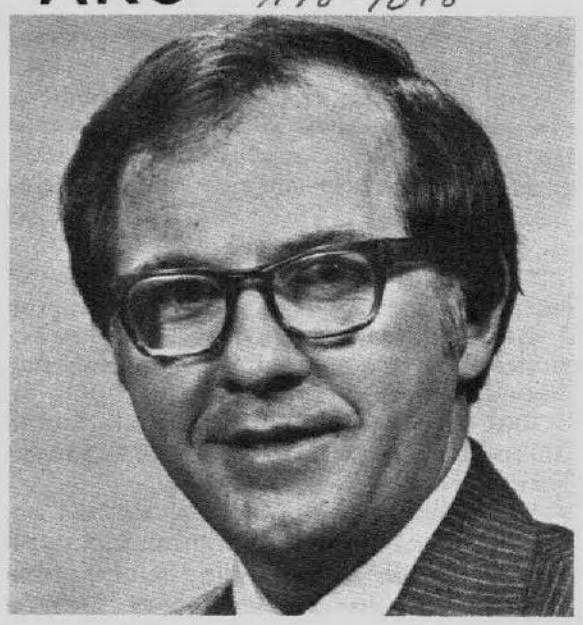
Jack has worked in a number of interesting research programs at ARC. They include the development of aerodynamic theories and verification through wind-tunnel experiments of the concept of wing conical camber for application to subsonic and supersonic aircraft; the development of theories to verify the application of canards as effective control surfaces for subsonic and supersonic aircraft; experimental verification of vehicle shapes directed at understanding potential gas dynamics problems associated with entry into planetary atmospheres other than Earth (Mars and Venus); and management of aeronautical programs leading to research aircraft to prove VTOL and rotorcraft concepts.

The author of many technical reports, Jack has received several honors for his work, including most recently the NASA Exceptional Service Award. He and his wife, Winnie, and three of their five children presently live in Saratoga, California.

Though the forthcoming position will provide an excellent opportunity to make further contributions to the agency's research efforts in aeronautics, the Ames Research Center will certainly miss the friendly and well-known face of a hard working and dedicated employee.

Young named Deputy Director of ARC

A78-1018



A. Thomas Young, presently Director of the Planetary Program in NASA's Office of Space Science, has been named the new Deputy Director of Ames Research Center. The assignment, effective February 1, 1979, was announced on Monday, November 6, by C. A. Syvertson, Ames Director.

Mr. Young was appointed to his current position in November, 1976. Previously he served as Mission Operations Manager and Mission Director of Project Viking, a responsibility of NASA's Langley Research Center, Hampton, Virginia. Viking is a NASA flight effort directed toward exploration of the planet Mars using automated spacecraft. The Viking mission utilized the 1975/76 Mars opportunity to conduct scientific investigations from orbit, during entry, and on the surface. It was the first United States Mars mission to land science instruments on the surface of the planet.

Young joined the Langley Center in December, 1961, working on Project Vector until March, 1965, when he was named Mission Definition Manager of the Lunar Orbiter Project. In 1968, Young was assigned the responsibility for the development of Mars mission objectives for the Advanced Space Project Office (Unmanned). Young was the Viking Science Integration Manager prior to his appointment as Viking Mission Operations Manager in early 1974.

Young received Langley Research Center's Sustained Superior Performance Awards in 1967 for his contributions to the Lunar Orbiter Project and in 1977 for his work on Viking. In 1977 he received NASA's highest award, the Distinguished Service Medal, for his contributions to Viking.

Young was born in Nassawadox, Virginia, April 19, 1938. He earned the degree of Bachelor of Aeronautical Engineering and Bachelor of Mechanical Engineering from the University of Virginia in 1961. Young was a Sloan Fellow at MIT in 1971-72 and received a Master of Management Degree.

Mr. and Mrs. Young and their son and daughter live presently near Annapolis, Maryland.

Landsat to assist Appalachian gas exploration

NASA has signed an agreement with the Appalachian Regional Commission (ARC) to test and evaluate the use of Landsat data for the identification of high potential gas shale exploration areas in Appalachia's eastern Devonian Shale Region.

Landsat spacecraft orbit at an altitude of about 917 kilometers (560 miles), surveying the Earth's surface to obtain remotely-sensed data in various bands of the energy spectrum (visible and near infrared). This data, in the form of images and computer-compatible tapes is proving useful to a wide range of interests – agriculture, geology, forestry, range resources, mapping and charting, land use management and water resources.

The Appalachian Regional Commission is a consortium of 13 member states: Ohio, Kentucky, West Virgina, New York, Pennsylvania, Tennessee, Virginia, Alabama, Georgia, Maryland, Mississippi, North Carolina and South Carolina, plus a federal co-chairman appointed by the President. Its objective is to build a better economy in the Appalachian Region. This ARC project is one of a series under NASA's Landsat Application Systems Verification and Transfer (ASVT) program.

Appalachia, an area of nearly 518,000 square km (200,000 square mi.) and 19 million inhabitants, is rich in natural resources – but it has never reaped the full rewards of its natural wealth. For many years the region has suffered from economic distress.

The Devonian shales with which this project is concerned are under an area extending from the Mississippi Basin to the Appalachian Mountains. (Other Devonian shale areas are located in the Michigan basin and under the southern parts of Indiana and Illinois and western Kentucky.) Formed about 350 million years ago, their multitude of plants and animals are preserved in a rich organic legacy of natural gas. The gas is found in sealed fractures (cracks in the Earth's crust).

These fractures are easy to find when visible on the Earth's surface, but it takes sophisticated measuring and sensing devices, such as the Landsat spacecraft, to detect and measure them when they lie beneath the surface, as they do in this region.

One of the unique features of Landsat imagery is that it enables geologists to locate and identify large faults and fractures which a ground or aircraft observer would see only small portions of and hence fail to recognize as a general regional pattern.

(Continued on Page 3)

Space Shuttle status

With a target date of Sept. 28, 1979, for the first manned orbital flight of NASA's Space Shuttle, fabrication and testing of components continue at various locations throughout the U.S.

Measures have been taken to accelerate production and installation of the Thermal Protection System (TPS) tile for Orbiter 102. Staffing has been increased at both the Rockwell International facility at Palmdale, and at the Lockheed plant at Sunnyvale, where the tiles are made. New tile inspection equipment has been obtained to improve productivity of the tile.

Testing of the Space Shuttle Main Engine (SSME) continues at NASA's engine test facility near Bay St. Louis, Miss. Between Sept. 10 and Oct. 12, 13 test firings were conducted on two engines for a total of 3,794 seconds. Ten of those tests reached rated power level (RPL), accumulating 3,096 seconds.

Three of the tests were prematurely shut down, two for instrumentation problems and one (first test on engine 0006) when propellant priming of the engine oxidizer system occurred out of sequence and caused damage to a fuel turbopump turbine and the main injector of the engine.

Results of an extensive hardware inspection of engine 0005, after a series of 16 test firings in August and September, have been described as very satisfactory by project engineers at NASA's Marshall Space Flight Center, Huntsville, Ala.

Total engine testing through Oct. 11, shows 350 engine test firings for a total time of 26,530 seconds, including 8,969 seconds at RPL.

Full duration testing of the complete main propulsion system, a cluster of three engines, is scheduled for early 1979 when the first manned orbital flight configuration engines become available.

The third static test firing of a solid rocket booster (SRB) motor was conducted Oct. 19 at the Thiokol Chemical Corp.'s test site near Brigham City, Utah. Early data indicates a successful test firing. Gimbaling of the motor nozzle also appeared to be satisfactory from early test data.

Meanwhile, all elements of a Space Shuttle have been mated for the first time – two SRBs, an external tank and an orbiter (101) for vertical vibration testing at the Marshall Center. The testing is to verify that the Space Shuttle structure will perform during various stages of the flight as predicted.

Gillam elected to AAS

Isaac T. Gillam IV, Director of NASA's Dryden Flight Research Center, has been elected as a Fellow to the American Astronautical Society (AAS). This level of membership is conferred in recognition of Gillam's significant contributions to astronautics. The newly elected Fellow was presented at the AAS Awards Luncheon held in conjunction with the 1978 AAS Annual Meeting, Oct. 31, 1978.

Founded in 1952, the AAS comprises over 1,000 members. Researchers, scientists, executives, educators and other professionals in the field of astronautics and related areas promote and support scientific research related to the development of astronautical sciences.

Art exhibit

The Mi Ae drawings in the Life Sciences Library are for sale. Also, she will be sending some new drawings from time to time.

US Treasury Dept. commends ARC participation

Ames Director C. A. Syvertson (left) and 1978 CFC Chairperson Kenji Nishioka accept award from the U.S. Treasury Department for Ames' 80% participation this year.

Teague awarded medal

Rep. Olin E. Teague (D.-Texas) was awarded NASA's Distinguished Public Service Medal, Oct. 3, at an outdoor ceremony at NASA Headquarters, Washington, D.C. Teague is Chairman of the House Committee on Science and Technology.

NASA Administrator Robert A. Frosch lauded Teague's efforts in behalf of NASA and the U.S. space program saying: "For us at NASA, Chairman Teague's most outstanding asset has been his consistent and unswerving faith in the value and virtue of a dynamic and imaginative space program – a faith which he has conveyed to all the elements of the government, industry and university team on which all progress in space depends.

"The single episode which best epitomizes Mr. Teague's profound faith in the space effort, was the leadership he demonstrated at the time of the Apollo fire in early 1967 . . . Undoubtedly, more than any other single individual, Chairman Teague saved the program and redirected our energies in a direction which resulted in the successful lunar landing within the decade of the '60s."

The citation accompanying Teague's medal award reads:

"In recognition of his distingusihed contributions to the scientific and technological advancement of the nation by his steadfast advocacy of a strong national space program. In two decades of leadership positions in the House of Representatives, he gained the continuing support of the Congress for the cause of building and maintaining the space-faring capabilities of the United States."

Teague is retiring from Congress after his present term, following more than 30 years of service as a member of the House of Representatives.

JPL solar contracts

NASA's Jet Propulsion Laboratory, acting for the U.S. Department of Energy (DOE), has awarded three study contracts for development of a solar energy concentrator for generating electrical power.

The companies are: Acurex, Inc., Mountain View, Calif.; Boeing Engineering & Construction Co., Seattle, Wash.; and General Electric Space Division, Valley Forge, Pa.

The contracts, each valued at about $240,000, will be for the first part of a two-phase program aimed at development of a low-cost point-focusing solar concentrator. As many as six will be tested and evaluated at JPL's Solar Thermal Test Site at Edwards, Calif.

A point-focusing solar concentrator directs mirror-reflected sunlight to a point, at which is located a heat absorber and a heat-driven engine. The engine turns a generator to produce electricity. Utilizing this concept, solar energy can provide supplementary electrical power for small communities and rural areas.

The solar concentrator to be developed under the new contracts includes the optics (mirrors) and the mechanism that allows the concentrator to track the Sun. Heat absorbers and engine generators are being developed under separate contracts.

Prime objective of the three contract awards is determining of the best way to obtain the greatest thermal performance at the least cost per concentrator.

The study is managed by JPL for DOE's Small Power Systems Program. The work is being done for DOE under an interagency agreement with NASA.

Shuttle Main Engine passes 13-minute test

A Space Shuttle main engine has been successfully static fired for more than 13 minutes to test its capability to return the Shuttle orbiter to the landing site in case of a mission abort during launch.

The main engine operated continuously for 823 seconds which is the longest burn time an engine should ever encounter during an actual Shuttle mission.

Each Shuttle orbiter has three main engines and their normal burn time is about 8 minutes. The longer burn time would be required if one of the engines failed during flight.

The test took place Monday, Oct. 30. Engineers reported the engine appeared to operate normally and without problems.

Federal health insurance update

Age 22

When an employee elects family coverage under one of the governmental health benefit plans, all children under age 22 who are unmarried (and never have been married) and the spouse are automatically covered. When a child reaches age 22 or marries, coverage is terminated with no notice to the employee. Coverage is continued regardless of age for those children who are incapable of self support, but substantiating documentation must be provided for this coverage.

There are conversion plans available for those young people approaching age 22 which will guarantee continued coverage (with lesser benefits in most cases) regardless of health conditions. Application for this coverage must be made approximately 90 days before the 22nd birthday.

Retirement

An enrollment may be continued into retirement with the same benefits as if you were an employee if your retirement is:

1. on an immediate annuity,
2. after 12 or more years of creditable service or under the disability provision of the retirement law, and
3. after enrollment (or coverage as a family member) under the FEHB Program for
   a. the five years of service immediately preceding your retirement, or
   b. all service since your first opportunity to enroll.

Employees who have been covered by the Civilian Health and Medical Program of the Uniformed Service (CHAMPUS) and a Federal enrollment during the five years of service immediately preceding retirement, may continue their Federal Employees Health Benefits Program enrollment into retirement. Coverage under CHAMPUS is creditable toward meeting requirements (3a) or (3b) above.

Landsat

(Continued from Page 1)

The Landsat data would be used specifically in ground features analysis in three test areas:

- At the intersection of Ohio, Kentucky and West Virginia, centered at Huntington, W.Va.
- Bordering New York and Pennsylvania, east of Lake Erie, centering at Bradford, Pa.
- Intersection of Kentucky, Virginia, and Tennessee, centering east of Middleboro, Ky.

The data would be used to locate and identify linear traces on the surface which would denote possible underlying faults and fractures as likely drill sites.

The ARC and its member state agencies and associated institutions can then use these data in the evaluation of areas which show high potential for natural gas exploration and associated development. Evaluation techniques and test phase information will be provided to geologists and planners in state offices and other organizations having similar needs.

The memorandum of understanding between the ARC and NASA was signed by Robert W. Scott, ARC Federal Co-Chairman, and Dr. Anthony J. Calio, NASA's Associate Administrator for Space and Terrestrial Applications. Project managers are Hugh B. Montgomery of the ARC in Washington, D.C., and Arthur T. Anderson of the Applications Directorate at NASA's Goddard Space Flight Center, Greenbelt, Md.

1978 NASA-Ames Slow-Pitch champs

Front row – Al Wong, RF; Tom Itow, P manager; Curtis White, C; Jerry Wang, 3B. Back row – Eddie Ramirez, SS; Ruben Ramos, 1B; Walt Brooks, CF; Dennis Padilla, LF; Rolfe Folsom, IF. Not pictured: Bill Crawford, SF; Ed Tischler, 2B; Richard Beecher, OF/IF; Bob Lotz, IF.

The Sterling Pounders, down 11-2 at one point, went to extra innings to capture the Ames Slow-Pitch Softball Championship 12-11 over the defending perennial champions, Pumas. The Pumas, dropped twice by the Pounders for their only regular season losses, appeared to have revenge at hand as they tallied eleven runs in the first five innings. However, the Pounders sharpened up their defenses and shut off their opponent beyond the fifth inning, while rallying dramatically to tie the score at 11 all at the end of regulation play. A bases-loaded single by Al Wong drove in the winning run in the bottom of the eighth to cap the come from behind victory.

In preliminary play-off action the Pounders pounded the Mavericks 15-9 while the Pumas crushed the Muffdivers! The Sterling Pounders finished the season with a record of 14 wins against a lone defeat.

Awards presented to Army employees

Three awards were presented to members of the Army Research & Technology Laboratories AVRADCOM by Frederick H. Immen, Chief, Advanced Systems Research Office, during recent ceremonies held at their headquarters here.

L to R: Mr. Immen; William L. Andre, aerospace engineer, Advanced Systems Research Office, received a U.S. Patent for his invention, Counting Device Impulse Activator with Torque Limiter, used in artillery firing, and an Incentive Award check for $50; Dr. Richard M. Carlson, Director of the Laboratories, received his Ten Year Federal Service Certificate, and Cindy Jellison, Program Analyst, Plans, Programs & Budget, received a Certificate of Promotion.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-160	Personnel Clerk (Typing) or Clerk-Typist (extends closing date)	GS-4/5 or GS-3/4	APX	Centerwide and outside	12-4-78
79-13	Library Technician	GS-5/6	ATL	Centerwide	12-4-78
79-14	Secretary (Typing)	GS-4/5	ATL	Centerwide and outside	12-4-78
79-15	AST, Experimental Facilities & Equipment (Facilities Engineering Grp. Ldr.)	GS-13	FAX	Centerwide	12-4-78

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-113	Supervisory Aerospace Engineer	LB	Marshall Johnson
78-139	Secretary (Typing)	DOS	Adella Fahey
78-141	Supervisory AST Tech Resources Mgmt Asst Chief, Tech App Br	SEA	Cancelled
78-148	Procurement Analyst	ASB	Joseph Rokovich
78-166	Personnel Management Specialist	APM	Joan McCullough Kathleen Morehouse
79-4	Library Technician	ATL	Margaret Lundell

Want ads

Transportation

For Sale: 1973 17' Self container Trailer, sleeps 6. Mint condition (with toilet and shower); 2 s/steel sinks, oven, elec. or gas refrigerator; and many extras. Asking $2950.00 or best offer. Call (408) 722-8091, Watsonville.

FOR SALE: 1978 Mustang II Ghia, A/T, V-8 302 engine, AC, sunroof. $6150.00. Call 736-1853.

'69 VW Squareback Wagon; fuel injection; 12,000 miles on engine. $999.99. Call 252-4535.

Nimrod Tent Trailer. Large, sleeps 8; built-in stove, refrigerator, sink, water tank; new tires. Excellent condition. $1,500.00. Call (408) 245-8325.

FOR SALE, 1976 280 Z, $7,000. Metallic brown, AM/FM, low mileage. G. Hill, 964-5734 after 5 p.m.

FOR SALE: 1968 VW Squareback, excellent condition, 62,000 miles. Call Bob Taylor at 948-4941.

'71 Matador stn. wgn., rebuilt trans., w/1 yr guarantee, Michelin tires, mags, A/T, P/B, original owner, clean, good condition. $650/best offer. Call after 5 p.m. 739-5373.

1975 Camaro. 38 K miles. PB, PS, AT, radials, AM/FM stereo/cass. $3950. Call 245-4341 weekdays after 5 p.m.

1976 Toyota Corona Stn. Wgn., 5 speed, air cond., 39,000 miles, orig. owner, excellent condition, asking $3900., call 739-5373 after 5:00 p.m.

Housing

SQUAW VALLEY RENTAL – Skiing with no traffic headaches. Fully furnished condo. Sleeps 5; adjacent to lifts. Call Ray Savin, 964-2170.

WANTED TO RENT: 1 or 2 bedroom duplex within 10 miles of Ames for single female employed at Ames. Rent not to exceed $250 per month. Please call 965-5332 or 296-2009 after 5 p.m.

For Rent: 4 br/2 ba house, AEK, fenced backyard, patio, 2-car gar., fireplace. Westgate area. $475 mo. 1st, last and security. Call 289-8789 after 5 p.m.

New Ames employee is looking for people interested in sharing house rent near Ames. Call Stan, ext. 5435.

Needed: Housing for Minimester students for the month of January. These students will be working at Ames and are from the University of the Pacific in Stockton, CA, and the University of Puget Sound in Tacoma, WA. If you can provide housing for these students or know of available housing, please call the Training Office, ext. 5422.

FOR RENT: S. Tahoe Cabin, 2 ba., sleeps 8, w/w carpet, fireplace, washer, dryer. Call 225-8043.

Miscellaneous

Four tires and wheels from '76 Honda. 6.00 by 12. $60 takes all. Call 738-4166.

FOR SALE: Singer sewing machine, Stylist model. Hardly used; just serviced. Straight, zig-zag, and flexi stitches. $150. Console piano, walnut finish, mint condition. $695. Call 323-7070.

Dried Apricots: Real "old-fashioned," hand-cut, Santa Clara Valley style, fancy Blenheim cots. $2.25 per lb. Will deliver to Ames. Call 253-3851.

FOR SALE: Used Channel Master color antenna No. 1231 and heavy duty rotor and controls. $30 (or best offer). One rim and tire 8:75-16-5 (never used) from ¾-ton Chev. truck, 8 lugs $50 (or best offer). Call 252-4753 after 4:30 p.m. or ext. 6145.

Mariani "Dried Fruit Gift-Pak" suitable for mailing consisting of dried apricots, prunes, figs, pears, peaches and chocolate covered prunes in vacuum sealed packages ("Moist-Pak"). Excellent gift for the holiday season. $6.00/box. Profit to Sunnyvale High School Marching Band. Contact Joe Rokovich, 739-6054.

FOR SALE: Realistic portable C.B. Three watts, 4 channels. Includes: Center loaded antenna and flexible rubber antenna. Ext. mike w/clip. Channels 14 and 19 and leather carrying case. $75.00. Call 493-0719.

YOU'RE IN LUCK. Space has just become available in an exciting ride group from the Blackford High School Area of San Jose. Enjoy spine-tingling rides to work at 7:30 and mind-tingling discussions home at 4:00. Join the crowds calling Jim Connolly (X6609) or Herb Finger (X6598) for details. Licensed drivers only.

FOR SALE: Corner Set/Table, good condition $50. Call after 5:00, 961-4105.

WANTED To Buy . . . old radios, battery, electric, crystal, and related parts. Book, tubes, magazines, etc., pre-1946. Call Jim Cirner, 967-7672.

India silk sari, new, colorful, capturing. Can make a long or evening dress. $35. Kashmir woolen shawl, new, $40. Bedspreads, quilted, colorful, decorative, like new. Queen: Red-orange-green, $35; Twin: light blue-green, $20. Wall lamp, very good condition, $15. Boy's ice skates, size 4, $20; blanket, twin size, like new, $15. Call 964-1725.

2 Orchestra Tickets to "Les Ballets de Trockadero de Monte Carlo," Nov. 24, 1978. San Jose Center for Performing Arts. $5.00 each. Call E. Menefee, ext. 6195.

Want a tax break? Want to do a good deed in this life? Want a relaxed morning? Buy Boy Scouts' breakfast tickets (pancakes, ham, coffee/tea/milk) for $1.50 each (children under 5 are free). Time and date: 7:30 a.m. to 1 p.m., Sunday, December 3rd, 1978 at Thunderbird Scout Hall, MV. For tickets or further information, call Arun K. Aggarwal at 964-1725 after 3 p.m. or call ext. 6278.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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Ames Research Center
Moffett Field, California 94035

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CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

NOV 27– Aeronautics Corporate Memory Seminar Speaker: Dr. Leonard Roberts, NASA-Ames Research Center Topic: Aeronautics Capabilities, Facilities, Objectives Time: 1:00–3:00 p.m. Location: N-201 Main Auditorium	NOV 28–	NOV 29–	NOV 30–	DEC 1–
DEC 4–	DEC 5–	DEC 6–	DEC 7–	DEC 8–
DEC 11–	DEC 12–	DEC 13–	DEC 14–	DEC 15– If you wish to have an event announced on this Calendar, please notify Linda Mackey, Visits Coordinator, Ext. 5546, Mail Stop 253-1. She must receive the information by Wednesday between publication dates in order to meet the deadline.

WEEKEND ACTIVITIES:

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

AMES RESEARCH CENTER

NOVEMBER 21 THRU NOVEMBER 27, 1978

A LA CARTE MENU

TUESDAY	Veal Parmesan with Spaghetti	1.45
	Beef Croquettes and Creamed Peas or Omelette	1.30
	Choice of One: Whipped Potatoes, Buttered Spaghetti, Green Beans, Glazed Cartots or Salad	
	Soup - Cream of Potato	.30 & .45
WEDNESDAY	Roast Tom Turkey with Dressing and Cranberry Sauce	1 45
	Pork Fried Rice	1.30
	Choice of One: Mashed Potatoes, Candied Yams, Buttered Spinach, Cauliflower or Salad	
	Soup - Green Split Pea	.30 & .45
THURSDAY	CLOSED - THANKSGIVING HOLIDAY	
FRIDAY	Shrimp Chow Mein and Rice	1.45
	Chicken Tetrazzini or Omelette	1.30
	Choice of One: Whipped Potatoes, Rice Pilaf, Zucchini and Tomatoes, Hominy, or Salad	
	Soup - Seafood Gumbo or Borscht	.30 & .45
MONDAY	Beef Steak Creole Style with Rice	1.45
	Baked Tuna and Noodle Casserole or Omelette	1.30
	Choice of One: Whipped Potatoes, Au Gratin Spinach, Buttered Beets or Salad	
	Soup - Cream of Chicken	.30 & .45
DAILY SPECIALS	INCLUDES: A $1.30 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE	1.80
	CHEF'S CHOICE - Hot Sandwich and Large Bowl of Soup	1.10

DAILY DIET SPECIAL

	CHEF'S CHOICE: Vegetarian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg	1.50

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

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NASA

The Astrogram

VOLUME XXI NUMBER 4

November 30, 1978

Pioneer Venus 1 encounter begins December 9

On December 4, the Pioneer Venus Orbiter spacecraft, Pioneer Venus 1, will enter orbit around Venus for a year or more. Five days later, on December 9, the five atmosphere entry craft which make up the Pioneer Venus Multiprobe spacecraft, Pioneer Venus 2, will enter the Venusian atmosphere. They will go in at points spread 10,000 km (6,000 mi) apart over the planet's Earth-facing hemisphere.

Ames controllers will be set up to give up-to-date briefings of the mission's progress beginning Saturday, December 2.

Pioneer Venus 2 has undergone a series of maneuvers and released four probes designed to study the atmosphere of Venus.

A large probe was released on Wednesday, Nov. 15. Three smaller probes were then released on Nov. 19. All four, plus the Bus which transported them from Earth, will arrive at Venus and begin their descent into the atmosphere on Dec. 9.

On Nov. 9, while Pioneer Venus 2 was 11,265,400 kilometers (7,000,000 miles) from Venus, controllers here at Ames performed a small trajectory correction maneuver to provide the desired entry point at Venus for the large probe.

They also commanded a 90-degree rotation of the spin axis to point the aft-mounted, medium-gain horn antenna toward Earth, obtaining a fourfold increase in communications capability.

On Nov. 15, just prior to large probe release, the craft was maneuvered to provide the proper entry angle at Venus. This was followed on Nov. 16 and 19 by maneuvers to provide the desired small probe entry points which are spread 9,660 km (6,000 mi.) apart over Venus' Earth-facing hemisphere.

The three smaller 91-kilogram (200-pound) entry craft will enter the Venusian atmosphere Dec. 9, minutes after the larger, 318-kg (700-lb) probe enters. The large probe will enter at the equator on the day side of Venus.

The transporter Bus will follow the probes, taking upper atmosphere measurements and then burning up as it enters the lower atmosphere on Dec. 9.

All four probes have their own command, communications, power and other systems. They are equipped with heat shields and titanium pressure vessels to help them withstand Venus' 480-degree Celsius (900-degree Fahrenheit) heat, its corrosive atmosphere and its crushing atmospheric pressure, 100 times that of Earth.

The Multiprobe and its sister spacecraft, the Orbiter, will conduct a total of 30 experiments which are expected to improve our understanding

(Continued on Page 6)

R. T. Jones awarded Prandtl Ring honor

A78-0677

Dr. Robert T. Jones has been awarded the Prandtl Ring Award by the Deutsche Gesellschaft für Luft- und Raumfahrt (German AIAA) at its meeting on September 26 in Darmstadt, Germany.

Considered the highest honor in the field of Fluid Dynamics, the award was for Dr. Jones' "outstanding contributions in the field of aerodynamics" and last year was presented to Professor E. A. Truckenbrodt of the Technische Hochschule in Munich.

In 1956, Dr. Von Karman was the very first recipient of this award. Three previous U.S. recipients include Adolf Bussemann, Hans Lipmann, and William Sears.

Ames Children's Christmas party and raffle

The annual Ames Children's Christmas Party will be Saturday, December 16, from 10:00 a.m. to 2:00 p.m. in the Ames Hangar Facility (Building 211). ARA members, their spouses, children, and grandchildren are eligible to attend. ARA membership includes all Federal Civil Service employees at Ames, all retired Ames employees, and all on-site contractor employees.

Free admission tickets were furnished to eligible children 12 years of age and younger when requested on the form distributed to the ARA members. If you are a retiree and would like to request free tickets, contact Judy Long, telephone extension 5880, as soon as possible. There will be a 50¢ charge at the door for children without admission tickets. Children over 12 years of age and adults will be admitted with a $1.00 raffle ticket which can be purchased from your loyal organization volunteer, an ARA Board member, or at the ARA store in the Ames Cafeteria at noon Tuesdays and Thursdays.

For the new people at Ames who are unaware of what the Children's Christmas Party is, it is an annual affair sponsored by the Ames Recreation Association (ARA). It is geared for the young children 11 and under, however, adults alike can enjoy the activities. Mr. and Mrs. Claus will be there as well as clowns, making those exotic balloon animals, young dancers from a local dance studio, the great Ed Kelley Puppet Show, a face make-up booth, the moon walk, rocking horses for the little children, balloons, and a free gift for each child 11 years of age and under. Also, last but not least, there is a refreshment area with free drinks (soft), coffee and cookies. It can be a very memorable experience for the children who attend.

We are still looking for more *volunteer* help to work during the party. Help is needed in handing out gifts, balloons, and doing other miscellaneous tasks. We try to set it up so people can work 2 hours or so either in the morning or in the afternoon. Young people are also welcome. Your help would be appreciated. To volunteer, call Clara Johnson, extension 6035 or Fred Baker, extension 5488.

Raffle ticket sales for the annual Ames Children's Christmas Party on December 16th blasted off last week. It began with a kick-off meeting of all the ticket sales people who represent the organizations at Ames in each building and who will be conveniently available for everyone at Ames to buy raffle tickets. Retirees can contact Betty Hemphill at extension 5630 for tickets. The tickets cost $1.00 each.

The prizes this year are fantastic! There is a *Polaroid Polavision Land* camera and projector which could provide great fun to all; also on the list is a *propane barbeque grill* which is a real dandy for the backyard chef; a *Schwinn Varsity 10-speed bicycle* for the person who enjoys staying in shape, keeping that young feeling or just saving fuel; there are the *"His" and "Hers" quartz digital watches*, which come as a package for the people who think on time, and last of all there is a handy dandy *AM/FM clock radio* for pleasantly waking you in time for work (or golf). Great prizes – especially when you know you can win them for only a small contribution for tickets.

By purchasing the raffle tickets, you not only have an excellent chance of winning something nice and very useful, you also are helping defray some of the costs for the children's gifts at the Ames Christmas Party. Each raffle ticket also will admit one person into the Christmas Party.

Get your tickets soon. Who knows – it might be your turn to win a nice prize!

(Photo on Page 7)

Blood Mobile visit December 13

The American Red Cross Blood Mobile will visit Ames Research Center on December 13, between the hours of 8:30 a.m. and 1:30 p.m. in Bldg. 239, Room B39.

Asian-American Week recap

A78-1035-14

March Fong Eu speaks to ARC luncheon group during Asian-American Week's celebration.

The Asian-American Advisory Group would like to thank everyone who gave a hand in making the First Asian-American Week at Ames a tremendous success. The support by the Director, the EEO Office, ARA, Cafeteria, and above all the diligent effort of the Asian-American Week Planning Committee turned quite a unique and difficult program into a gratifying success.

Asian-American Advisory Group

A78-1035-18

Congressman Norman Mineta and C. A. Syvertson greet one another during Mineta's visit to ARC during Asian-American Week's celebration.

FEW meeting

The South Bay Chapter of Federally Employed Women (FEW) invites all federal (military and civilian) employees (women and men) to their next meeting which will be a Christmas luncheon at the Officers Club at Naval Air Station Moffett Field on Wednesday, December 13 from 11:30 a.m. to 1:30 p.m.

Prospective members are especially invited to the luncheon which costs $4.00 for members and $4.50 for non-members.

Reservations and check or money should be given to Pat Kirk at NASA/Ames Research Center by December 1, or call her on 965-5739.

FEW was founded in 1968 by a group of federally employed women in Washington, D.C. interested in carrying out the intent of a Presidential Executive Order which added "sex" to the other forms of discrimination prohibited in the federal service and by government contractors.

The South Bay Chapter, active since 1975, is one of hundreds of FEW chapters throughout the United States and overseas. Membership includes employees of many federal agencies in this area (NASA/Ames, U.S. Geological Survey, VA Hospital, Navy Department, etc.) interested in promoting equality and equal opportunity for women in government.

Notices

This Winter Quarter Art Gobets will teach the following courses at Foothill College:

a. Engr. 51A Tech. Drawing T TH 4 units 6:00-10:10 pm

b. Engr. 95 Blueprint Reading Sat 3 units 12:00 N-2:40 pm

a. Palo Alto Campus *b.* Mountain View Campus. Register early: First come, first served. Classes start January 2, 1979.

1979 SPACE CALENDARS are available for $2 each at the ARA store.

ARC Stamp Club

The next meeting of the Stamp Club will be on Wednesday December 6th at 11:30 a.m. in Room 113, Building N-241. Everyone welcome. Please plan to attend. Bring your lunch. Coffee will be served.

Ames Christmas Carolers

Singers and instrumentalists needed. Rehearsals to begin 11 December in Building 213. For information call Frank Cota, Ext. 5463 or Richard Pea, Ext. 6536.

Help needed

Santa needs more teen-age helpers!

The Ames Children's Party needs helpers for handing out gifts and helping at the refreshment table.

Please volunteer your teenagers and their friends for this fun and worthwhile day. They'll have fun too!

Please send names, ages, etc., to Clara Johnson, 233-13, X6035. THANKS!!!

Ames Honor awards ceremony

At an awards ceremony held on November 17, NASA's Deputy Administrator, Dr. Alan M. Lovelace and Center Director, C. A. Syvertson presented the NASA Honor Awards to six individuals and three groups. Receiving the Exceptional Scientific Achievement Medal was Alvin Seiff, Staff Scientist for the Space Sciences Division. His citation read, "For his high degree of creativity in the conception, development, and application of techniques to measure the structure of planetary atmospheres by in-situ use of instruments on entry probes and for his contributions to planetary atmospheric science resulting from these measurements. The Exceptional Service Medal went to five Ames employees: Gregory W. Condon, Chief of the Helicopter Flight Investigations Branch, "In recognition of his outstanding achievements in directing flight test and evaluation activities, resulting in the successful development and flight demonstration of the research capabilities of the Rotor Systems Research Aircraft. Under his direction, the RSRA has been effectively demonstrated to be capable of conducting efficient rotorcraft technology research and reducing the cost and time of developing and flight demonstrating advanced rotorcraft technology." Donald L. DeVincenzi, Assistant Chief of the Extraterrestrial Biology Division, "In recognition of outstanding achievements in the management of scientific research in the field of exobiology. Under his leadership, significant advances have been made in those Agency Life Science programs concerned with chemical evolution and the origin of life in the solar system." Lionel L. Levy, Jr., Aerospace Engineer for the Experimental Fluid Dynamics Branch, "In recognition of his contribution to computational aerodynamics through his vivid illustration of the ability of numerical sinulation to predict the behavior of steady and unsteady transonic flow." Kenneth L. Orloff, Aerospace Engineer for the Large Scale Aerodynamics Branch, "In recognition of his exceptional contributions to the development of advanced laser velocimeter systems, and to the application of these systems to important research problems in fluid mechanics and aircraft aerodynamics." Samuel White, Chief of the Helicopter Technology Division, "In recognition of the leadership he provided to all of the technical and management disciplines in the NASA/Army RSRA Project Office, his contributions to the professional growth of the Project Office staff, and the significant contributions that his leadership made to the success of the RSRA during the critical and difficult stages of the program."

A NASA Group Achievement Award was presented to the Quiet Short-Haul Research Aircraft Project Team "In recognition of exceptional performance during development and test of the Quiet Short-Haul Research Aircraft. Your work made a significant contribution to the success of the QSRA Program and is an outstanding example of cooperative effort between government and industry." Team members are:

John Cochrane, Project Manager
Milton Alberry
Kiyoshi Aoyagi
Patricia Beck
Standish Benbow
Anthony Billalba
Alfred Boissevain
Kathleen Boyer
Dennis Brown
Paulette Burgess
Robert Carros
Joseph Douvillier, Jr.
Jack Franklin
Robert Innis
Emma Jope
Alfred Kass
Harry King
James Martin
Robert McCracken
Dalton Mountz
Pete Patterakis
Jack Ratcliff
Dennis Riddle
Edward Rogers
James Rogers
Michael Shovlin
Howard Turner
David Walton
John Weyers
Darrell Wilcox
Joseph Zucarro

NASA Headquarters
Jack Levine

Lewis Research Center
Bruce Clark
Jack McArdle
Michael Valerino

Receiving NASA's Public Service Group Achievement Award was the Boeing Commercial Airplane Company for the QSRA Project. The citation read, "In recognition of outstanding contributions by the Boeing QSRA Project Team in developing and manufacturing the Quiet Short-Haul Research Aircraft on schedule and under budget, while meeting or exceeding all contract requirements." George Kelley, Project Manager, came from Seattle to accept the award on behalf of the team and the Boeing Company. Other team members are:

Team members:

C. A. Abell
A. D. Allen
R. H. Ashleman
M. O. Bay
H. E. Benson
R. P. Bielka
J. Bueno-Varela
W. C. Botts
D. V. Chovil
D. E. Cumming
H. B. Cutting
J. W. Day
M. P. Dreves
A. E. Ebneter
C. C. Flora
A. E. Forner
W. S. Fox
B. P. Gibbs
W. P. A. Harris
T. K. Hesketh
W. M. Howard
R. A. Kitto
H. Low
F. L. Malone
J. P. McBarron
M. Miller
T. B. Nickson
L. H. Nordland
J. E. O'Heron
J. T. Olson
T. H. Proehl
F. R. Quesnel
G. M. Sedenquist
R. E. Sever
A. D. Shah
C. M. Shannon
H. Skavdahl
J. Smith
T. E. Twiggs
M. D. Wehrman
G. E. Young

A Cosmos Group Achievement Award was presented to the members of the Cosmos 936 Team "In appreciation of dedicated service as a member of the NASA Cosmos team which developed seven experiments flown on the Soviet Biosatellite, Cosmos 936, August 3–22, 1977 and thereby extended man's knowledge and capabilities in space biology." Following the presentation of certificates to all team members, Project Manager, Kenneth Souza, presented the final Cosmos report to Dr. Lovelace. Cosmos team members are:

NASA Headquarters
Richard M. Farrell

Ames Research Center
Billy D. Allan
William D. Angwin
Henry Asch
Rosemarie Binnard
Robert Corbett
Evelyn P. Dye
Wayne M. Frazier
Beulah P. Gossett
Gladys Harrison
Emily M. Holton
Nozomu Iwasaki
Linda L. Jahnke
Richard D. Johnson
Peggy Kane
Janice M. Kennard
Harold P. Klein
Henry A. Leon
Ronald C. Lippard
Robert W. Mah
Stephen J. Mackin
Jaime Miquel
Paul H. Nelson
Delbert E. Philpott
Lynne Roach
Arlene V. Robinson
Joseph C. Sharp
Kenneth A. Souza
Charles E. Turnbill
Carol M. Volkmann
Kenneth W. Wolf

Ames Research Center Contractors
Sam Black
John Butte

A78-1052-5

Lionel Levy, Jr. is shown receiving the Exceptional Service Medal from the NASA Deputy Administrator while Mr. Syvertson waits to present the certificate.

A78-1052-2

Dr. Alan Lovelace, NASA's Deputy Administrator is shown pinning the Exceptional Scientific Achievement Medal on Alvin Seiff, while Mr. Syvertson looks on.

A78-1052-15

Center Director, C. A. Syvertson and Dr. Lovelace presented Project Manager John Cochrane with the NASA Group Achievement Award for the QSRA Project Team.

William Crawford
Thomas McCann
Howard Menche
Darrain Waters

Non-Civil Servant Investigators, Co-Investigators, and Staff
Stephen A. Landaw
Samuel Abraham
Jacqueline McGourty
Kenneth R. Castleman
Luis A. Chui
Rick Gordon
Joan Higgins
Cheryl Mills
Joseph P. Van Der Meulen
Eugene V. Benton
Ronald Cassou
A. L. Frank
David D. Peterson
Katherine Kato
Debra Dayhoff
Robert Lee
C. Lin
David J. Baylind
Patricia Halliday
Richard Lee
Chung Liu
Daniel Spengler
Emily Thompson
Russell Turner
Charay Vatanaprida

November 28, 1978 thru December 4, 1978

A LA CARTE MENU

TUESDAY
Veal Scallopini.....
Boston Baked Beans & Polish Sausage.....
Choice of One: Mashed, Ideal Potatoes, Buttered Spinach, Peas or Salad
Soup - Fresh Vegetable.....

WEDNESDAY
Roast Pork & Dressing.....
Spaghetti and Raviolli.....
Choice of One: Whipped Potatoes, Mashed Yams, Cauliflower, Buttered Lima Beans or Salad
Soup - Minestrone.....

THURSDAY
Beef Stroganoff.....
Macaroni, Cheese and Ham Casserole.....
Choice of One: Snowflaked, Creamed O'Brien Potatoes, Celery and Spinach, Glazed Parsnips or Salad
Soup - Cream of Onion.....

FRIDAY
Veal Birds with Mushroom Sauce.....
Seafood and Spaghetti with Special Sauce.....
Choice of One: Mashed, Au Gratin Potatoes, Tomato and Celery, Glazed Carrots or Salad
Soup - Shrimp Bisque.....

MONDAY
Lamb Stew and Dumplings.....
Baked Stuffed Potato with Cheese and Spinach.....
Choice of One: Whipped, Parslied Potatoes, Brussel Sprouts, Buttered Beets or Salad
Soup - Chicken Gumbo.....

DAILY SPECIALS
INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE.....

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP...

DAILY DIET SPECIAL

(Chef's Choice) - Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg.....

December 5, 1978 thru December 11, 1978

A LA CARTE MENU

Italian Pot Roast with Spaghetti.....
Turkey Au La King on Biscuit.....
Choice of One: Snowflaked, Hashed O'Brien Potatoes, Green Beans Savory Style, Buttered Corn or Salad
Soup - Tomato and Rice.....

Chicken Legs Bar-B-Que .....
Sweet and Sour Meat Balls.....
Choice of One: Mashed Potatoes, Buttered Rice, Zucchini & Tomatoes, Lima Beans or Salad
Soup - Beef & Noodle.....

Roast Veal and Dressing.....
Lasagna Baked.....
Choice of One: Whipped, Rissole Potatoes, Brussel Sprouts, Celery & Bacon or Salad
Soup - Green Split Pea and Croutons.....

Smoked Ox Tongue over Spinach with Raisin Sauce.....
Seafood Crepes and Newburg Sauce.....
Choice of One: Snowflaked, Hashed O'Brien Potatoes Peas & Corn, Italian Beans or Salad
Soup - Borscht or Cony Island Clam Chowder.....

INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE.....

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP...

DAILY DIET SPECIAL

(Chef's Choice) - Vegeterian Plate: 3 Vegetables, 1 Jello o
Cottage Cheese or Poached Egg.....

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Space Administration

Ames Research Center
Moffett Field, California 94035

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CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

DEC 11 – If you wish to have an event announced on this calendar, please notify Linda Mackey, Visits Coordinator, Ext. 5546, Mail Stop 253-1. She must receive the information by Wednesday between publication dates in order to meet the deadline.	DEC 12 –	DEC 13 – Blood Mobile visit Time: 8:30 a.m. – 1:30 p.m. Location: N-239, Room B39	DEC 14 –	DEC 15 –
DEC 18 –	DEC 19 –	DEC 20 –	DEC 21 –	DEC 22 – Have a nice Christmas!
DEC 25 – Christmas	DEC 26 –	DEC 27 –	DEC 28 –	DEC 29 – Reminder – The ARA Stamp Club's next meeting is scheduled for January 17th.

WEEKEND ACTIVITIES:

DEC 16 –
Annual Children's Christmas Party
Time: 10:00 a.m. – 2:00 p.m.
Location: Ames Hangar, N-211

DEC 30 –
NASA-Ames Photography Club is planning a field trip for Saturday, December 30th. Contact: Jerry Barrack at Ext. 6097, Mail Stop 237-9.

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

Pioneer Venus

(Continued from Page 1)

of Venus' weather machine, which in turn will help us better understand the forces that drive Earth's weather.

Several of the experiments belong to Ames researchers. The experiments and their objectives are as follows:

Composition and Structure of Atmosphere

Sounder Probe Mass Spectrometer (Dr. John Hoffman, University of Texas, Dallas): Measures atmospheric composition and vertical structure in the lower 67 km (42 mi) of the Venus atmosphere.

Sounder Probe Gas Chromatograph (Dr. Vance Oyama, Ames Research Center): Measures gaseous composition of lower Venus atmosphere.

Bus Neutral Mass Spectrometer (Dr. Ulf von Zahn, University of Bonn, West Germany): Finds densities of atmospheric constituents from 200 km (120 mi) down to 120 km (75 mi).

Orbiter Neutral Mass Spectrometer (Dr. Hasso Niemann, Goddard Space Flight Center): Finds density of neutral particles in the upper atmosphere from 150 km (93 mi) at periapsis to 200 km (120 mi).

Orbiter Ultraviolet Spectrometer (Dr. Ian Stewart, University of Colorado): Investigates temperature, energy balance, distribution and escape rate of atomic hydrogen, ultraviolet scattering properties of the cloud tops, character of ultraviolet albedo.

Atmosphere Structure Instrument, All Probes (Alvin Seiff, Ames Research Center): Measures thermal structure of atmosphere from 200 km (124 mi) down to surface at the four probe entry locations.

Atmospheric Propagation Experiments, All Probes (Dr. Thomas Croft, Stanford Research Institute): Studies atmospheric structure of Venus as it affects intensity and refraction of probe telemetry signals.

Orbiter Atmospheric Drag Experiment (Dr. Gerald Keating, Langley Research Center): Analyzes drag on the Orbiter by the upper atmosphere using S- and X-band Doppler data.

Cloud Structure and Particle Size

Nephelometer, All Probes (Dr. Boris Ragent, Ames Research Center): Explores the vertical structure of the clouds to find cloud particles (solid or liquid) from 67 km (42 mi) to the ground.

Sounder Probe Cloud-Particle Size Spectrometer (Dr. Robert Knollenberg, Particle Measuring Systems, Inc.): Measures particle size and number density in the clouds and atmosphere from 67 km (42 mi) to surface, defining levels of cloud layers.

Orbiter Cloud Photopolarimeter (Dr. Larry Travis, Goddard Institute of Space Studies): Determines properties of cloud and haze particles in and above clouds. Makes planet pictures.

Thermal Balance and Structure

Sounder Probe Solar Flux Radiometer (Dr. Martin Tomasko, University of Arizona): Measures deposition of solar energy in atmosphere, vertical cloud structure, cloud particle scattering.

Sounder Probe Infrared Radiometer (Robert Boese, Ames Research Center): Finds heat sources and atmospheric sinks.

North, Day and Night Probe Net Flux Radiometer (Dr. Verner Suomi, University of Wisconsin): Finds global and vertical distribution of sources and sinks of radiative energy (heat) in atmosphere and at surface.

Orbiter Infrared Radiometer (Dr. Fredric Taylor, Jet Propulsion Laboratory): Obtains vertical temperature profiles in the Venus upper atmosphere and cloud tops.

Dynamics, Winds, Circulation, Turbulence

Differential Long-Baseline Interferometry, Multiprobe (Dr. Charles Counselman, Massachusetts Institute of Technology): Wind velocities measured by computing exact flight paths during descents of all four probes, using ground-based radio-interferometric tracking (triangulation from three tracking stations).

Atmospheric Turbulence Experiments, Orbiter and Multiprobe (Dr. Richard Woo, Jet Propulsion Laboratory): Measures changes in probe radio signals to determine small-scale turbulence, intensity of turbulence and wind velocity. On Orbiter, measures small-scale turbulence, determines solar corona turbulence and solar wind velocity near the Sun.

Solar Wind/Ionosphere

Bus Ion Mass Spectrometer (Harry Taylor, Goddard Space Flight Center): Measures distribution and concentration of ions from about 2,000 to 120 km (1,240 to 75 mi).

Orbiter Ion Mass Spectrometer (Harry Taylor, Goddard Space Flight Center): Measures distribution of ions in upper atmosphere.

Orbiter Electron Temperature Probe (Larry Brace, Goddard Space Flight Center): Measures thermal structure of ionosphere.

Orbiter Retarding Potential Analyzer (Dr. William Knudsen, Lockheed Missiles and Space): Determines sources of energy input to ionosphere, plasma transport and solar wind-ionosphere interaction.

Dash 7 visits ARC

The first DASH 7 airplane, C-GNBX, manufactured by deHavilland Aircraft of Canada, Limited, interrupted its recent west coast sales tour to drop in at Ames. The visit fulfilled a long standing invitation from the pilots and engineers at Ames whose interest in the DASH 7 is a result of the center's lead role in the development of short-haul aircraft, and a long association with deHavilland and its products. (The center is currently operating two modified Buffalo aircraft evaluating powered lift concepts, a Twin Otter, and is sharing with deHavilland in a number of on-going STOL and VTOL programs.)

C-GNBX slipped into Ames virtually unnoticed at 5:00 p.m. November 7 after a full day of demonstrations at San Francisco International Airport. By the time the deHavilland crew arrived from their model early the next morning, a number of interested engineers were already inspecting the bright red and orange aircraft sitting alone on the NASA ramp, bathed in the warm sunshine.

Since pilots have little interest in just looking at new aircraft, the four STOL pilots at Ames (and one V/STOL pilot) were invited to take it up and put it through its paces. The day's activities were thus divided into three flights, two for pilots to do what pilots like to do with a new aircraft, and a somewhat (but not much) more sedate flight for the engineers.

engineers were selected from the various departments within Ames that are involved in short-haul research aircraft.

The flight began with a short takeoff roll and steep climbout from Moffett Field, for a ten-minute hop to Half Moon Bay. The aircraft skimmed over the 2500 ft high chain of hills lying between the San Francisco Bay and the Pacific Ocean, and felt comfortably solid in the late morning thermals. As it approached Half Moon Bay and joined the pattern of general aviation aircraft, the deHavilland pilot advised his passengers that he was going to demonstrate a standard 7-1/2 degree approach at 80 knots (92 mph), followed by maximum effort braking for a short rollout. The aim point was about one third of the way down the 5000 ft runway, just short of the mid-field ramp. The steep approach and nose-down attitude felt quite normal and comfortable. The aircraft rotated smoothly in the flare to a surprisingly soft touchdown, with wheel spin-up and squat switches triggering flap retraction and spoiler deployment to prevent even a hint of a bounce. As soon as the nose wheel was down, propeller discing and anti-skid braking was applied to stop the aircraft in an incredible 3 to 4 aircraft lengths. This sort of performance does not normally impress potential buyers of the DASH 7 (or grandma for that matter), but was

A78-1044-1

Two NASA pilots and two hardy engineers joined the deHavilland pilots on the first flight to evaluate the airplane's handling qualities, stall characteristics, and landing performance with three and four engines.

The DASH 7 returned from Half Moon Bay shortly before mid-day with two very impressed Ames pilots. It was then the turn of the engineers — greeted by the Ames engineers with a spontaneous round of applause.

One more capability was demonstrated before heading back to Moffett Field. The aircraft taxied to a holding position a little too close to the edge of the runway, so wing reverse propeller pitch, it backed up a little on the taxi way.

New Tilt Rotor Deputy Manager named

John Patrick Magee has been named Deputy Project Manager (technical) for the Tilt Rotor Research Aircraft Project Office, effective immediately, it was announced by Dr. Irving C. Statler, Director, Aeromechanics Laboratory of the Army Research & Technology Laboratories AVRADCOM. Magee reports to Lt. Colonel James H. Brown, Jr., Project Manager.

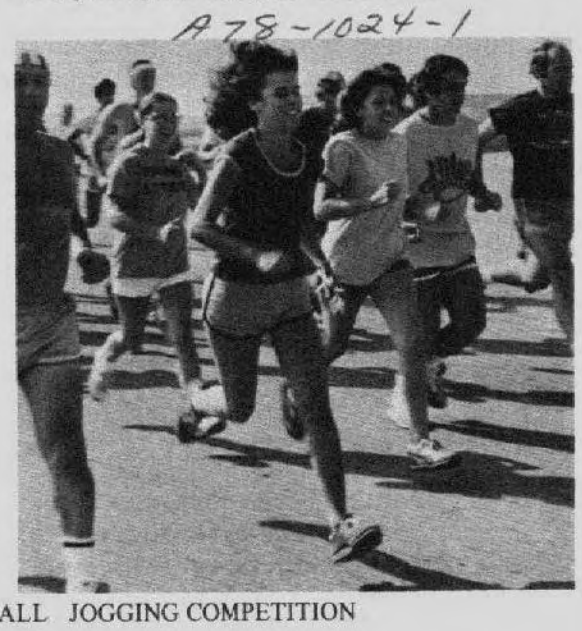
Prior to joining the Aeromechanics Laboratory, Magee was Program Manager of Boeing Vertol Company's Tilt Rotor Program. In addition, he also served Boeing as Project Engineer, Tilt Rotor Program, Group Leader, Tilt-Stowed Rotor Technology, and Engineer, Aeronautics Research Group.

A 1963 graduate of Loughborough University, Loughborough, Leics, England, Magee has authored or coauthored nearly 30 technical papers and reports, in addition to proposal documents and interim reports.

Magee received a Certificate of Recognition from NASA Ames Research Center in 1975 for creative development of technology for work on Tilt Rotor feedback controls during 1971–73.

Ames wins NASA-wide intercenter jogging competition

Ames joggers won the 1978 NASA-wide Intercenter jogging competition in both the 2-mile and the 6-mile divisions. The results for all centers are listed below. Congratulations to all ARC employees who participated this year! Good work!



FINAL RESULTS FOR 1978 NASA FALL JOGGING COMPETITION

2 MILE

	Center	Pts	Bonus	Total
1	Ames	75	41	116
2	JSC	96	15	111
3	HDQ	56	24	80
4	JPL	61	8	69
5	LERC	52	8	60
6	LARC	49	11	60
7	DFRC	18	23	41
8	GSFC	20	10	30
9	KSC	19	6	25
10	MSFC	0	3	3

6 MILE

	Center	Pts	Bonus	Total
1	Ames	123	19	142
2	LERC	97	6	103
3	JSC	78	14	92
4	LARC	53	7	60
5	GSFC	45	6	51
6	DFRC	19	11	30
7	MSFC	7	3	10
8	HDQ	0	0	0
9	JPL	0	0	0
10	KSC	0	0	0

Correction

Correction: Kenji Nishioka, pictured in the November 16 *Astrogram* with Center Director C. A. Syvertson, was the 1978 U.S. Savings Bond Chairperson, not the Combined Federal Campaign Coordinator. Ames' 1978 CFC Chairperson is Ben Briggs. The *Astrogram* wishes to apologize for the incorrect information and the mixup.

Christmas party raffle prizes

C. A. Syvertson, Armando Lopez and Rod Bailey proudly display a photo of the 1979 Christmas raffle prizes.

Golf

DELAVEAGA GOLF TOURNEY
Chairman: Sal Tardio
Co-Chairman: Conrad McCloskey

There were 46 Ames Golfers who braved the cold and windy day at Santa Cruz. It warmed up a little after 2:00 p.m., but not very much. This was the Ames Annual Turkey Shoot. The winners were:

1st Flight: 1 – John Mulkern, 2 – Fred Johnson, 3 – Owen Koontz, 4 – Delbert Norman, 5 – Dave Banducci.

2nd Flight: 1 – Vance Oyama, 2 – Mitch Radovich, 3 – Roland deConti, 4 – James Silver, 5 – Don Dust.

3rd Flight: 1 – Don Davis, 2 – Al Llamas, 3 – Stan Brovarney, 4 – Marion Macon, 5 – J. Levin.

4th Flight: 1 – Ina Rathert and Wayne Harry, tie, 3 - Charlene Banducci, 4 – Conrad McCloskey, 5 – B. B. Gray.

Closest to the pin: 1st and 2nd Flight – Harold Hill. 2nd and 3rd Flight – John Pogue.

"Thank you"

It was a real pleasure for my wife and me to be able to personally say "good bye" to so many of you at my recent "Cast-Off" party. I hope to use the TI-58 with the Marine Navigation programs in the near future. To those who were unable to be there but sent their good wishes, we thank you. Again, thank you all for the pleasure of being our friends over the years.

Sincerely,
Ralph K. Hallett, Jr.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
79-15	AST, Experimental Facilities & Equipment (Facilities Engineering Group Leader)	GS-13	FAX	Centerwide	Extended
79-16	Secretary (Typing)	GS-5/6	RK	Centerwide and Ames Army	12-15-78
79-17	Electrician	WG-12	RSTS	Centerwide and Ames Army	12-22-78
79-18	Assistant Planner and Estimator (Electrician) (Temporary NTE 1 yr)	WD-5	RSTC	Centerwide and Ames Army	12-22-78
79-19	Administrative Support Clerk	GS-5/6	D	Centerwide and Army	12-15-78
79-20	Secretary (Typing) or Legal Clerk (Typing) or Legal Technician (Typing)	GS-5/6 GS-5 GS-6	DP	Centerwide and Army	12-15-78
79-21	Secretary (Typing)	GS-4/5	FOI	Centerwide and Outside	12-28-78
79-22	Electronics Technician	GS-5/6	AAC	Centerwide and Outside	12-15-78
79-23	Supervisory Contract Specialist (Chief, Purchasing Office)	GS-9/11	ASP	Centerwide	12-15-78

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-141	Supervisory AST Tech Resources Mgmt Asst Chief, Tech App Br	SEA	Cancelled. The position will be filled by Carl Keller by other procedures.
78-145/146	Contract Specialist	ASA ASR ASF	Leslie Mittag Sheila Hessler Geraldine Nolt
78-161	Supervisory Electronics Technician	RSE	Peter Haro
78-163	Supply Technician	FOI	Sue Ellen Hemsworth
79-2	Supply Cataloger	AAP	Mary Brown
79-9	Secretary (Typing)	LB	Roxanna Woodworth

Want ads

Transportation

1975 Honda Civic CVCC Hatchback, 5-speed, radial tires, AM radio. Yellow with pinstriping, 47,000 mi. $2500/Best Offer. Call 961-2119 after 5 p.m. Ask for Mary.

FOR SALE: 1975 Monza 2 + 2, radio/heater, A/C, radials. $1800. Call 5599 or 592-2548 after 5 pm.

1974 MGB Roadster, 38,000 mi, new tires, brakes, exhaust. Loaded. Call 274-1944 or Ext. 6402.

'71 Plymouth Fury III, 76,000 mi, AM-FM-cassette. Looks and runs good. Second owner. $800. Call 969-3609 evenings and weekends.

Housing

FOR RENT: Squaw Valley 2½ br/2 ba condo, near tram, fireplace, carport, w/w carpets. Call 968-4155.

SQUAW VALLEY RENTAL–Skiing with no traffic headaches. Fully furnished condo. Sleeps 5. Adjacent to lifts. Call 964-2170.

Miscellaneous

JUST IN TIME FOR CHRISTMAS! Authentic Indian jewelry from New Mexico. Genuine turquoise, coral and other native stones artfully crafted in real silver. Choose from assorted rings, bracelets, necklaces, watchbands, earrings, etc. Special discount to Ames employees and friends. Call 736-7584 or Ext. 6053.

FOR SALE: Membership in flying club. Cessna 120. $6.75 wet, tach. Also for sale: Axle, tires, rims, springs, trailer hitch, channel iron for trailer. $50. Call 244-7310.

For Sale–Panasonic AM/FM car radio (in-dash type) with adjustable shafts and pushbutton tuning. $50. Ideal for small car. Call Ext. 5220 or 961-0211 (evenings).

Large china cabinet, pecan finish. Make offer. Call 258-6965.

Needed: Housing for Minimester students for the month of January. These students will be working at Ames and are from the University of the Pacific in Stockton, CA, and the University of Puget Sound in Tacoma, WA. If you can provide housing for these students or know of available housing, please call the Training Office, ext. 5422.

FOR SALE: Pool table, standard size, 1" slate top, leather pockets. Cover and all accessories included. Excellent condition, $500. Call 253-2748 after 4:30.

SKI Boots of various sizes for sale. La Dolomite, size 4, $5; Nordica, sizes 5 and 7, $15. Call 252-1076 after 5 pm.

RUGS FOR SALE: 10'x14' Used antique gold med. shag. Good condition. $50. 3'6"x5'6" Flokati handwoven wool from Greece. Never used! $55. Call 446-0208.

FOR SALE: 24" wheel "Free Spirit" boys' rugged 10-speed bike. New condition. $69/offer. Attractive, 4-post, antique style, single bed. $64/offer. Springs and mattress available. Call 738-2948.

For Sale: Sofa bed, Sears washer, 21" color TV–$50 each or $125 for all. Call 244-4632.

FOR SALE: Refrigerator, frost-free coppertone w/ bottom freezer. $125. Call 241-6229.

For Sale: New Michelin steel-belted radial, 175x13. $45.00. Pinto rim included. Call Ext. 6540 or 252-8609.

For Sale: Uniroyal Steel Belted Wide Oval Tires. HR70x15 (1 new; other 3–18 mos.) Make offer. Call 272-0367.

SET of 4 stock Z-28 tires and rims, $50; 2 deep-set chrome rims for GM car, $35; 1 good 60 series tire, $10. Call 732-7919.

WANTED: Boys' 10-speed Schwinn bicycle in good condition, priced under $100. Phone 732-7384.

Anyone phoning the Glass Lab on X-5462 – please let the phone ring at least 10 times. There is no one to answer for us and it may take that long to get to the phone.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor . . . . . Meredith Moore
Associate Editor . . . . Marcia Kadota
Reporters . . . . . NASA Employees

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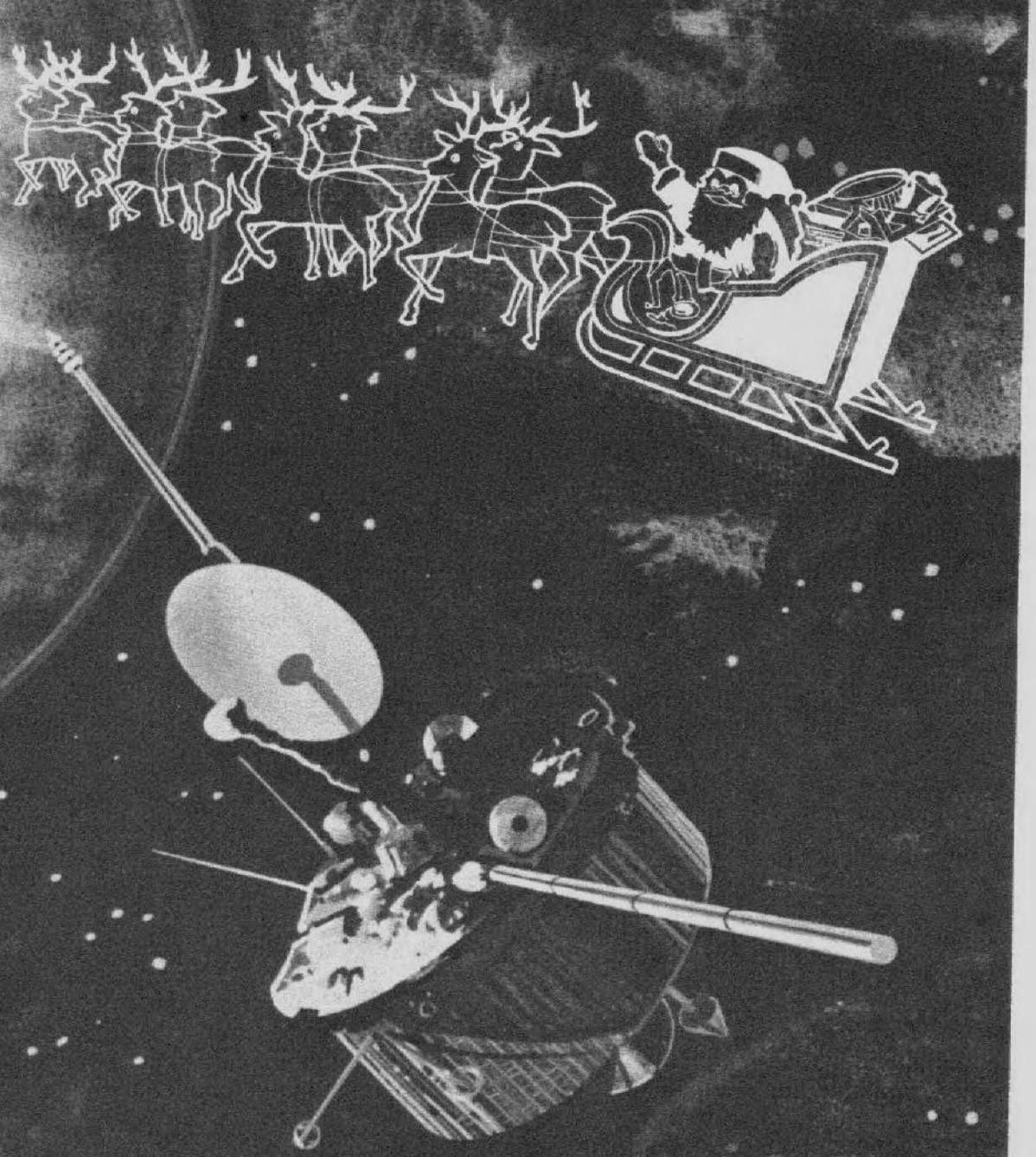
The Astrogram

VOLUME XXI NUMBER 5

December 14, 1978

used AC78-0238.2

HOLIDAY HAPPINESS



GUIDICE

On behalf of the management of Ames, I would like to wish all of you and your loved ones a very happy holiday season. The past year has been a busy and a successful one for Ames, and we can look forward with confidence to the year to come. While there will always be challenges and problems, I am certain the people at Ames can meet them successfully. Once more, my best wishes for the season and for the year to come.

C. A. Syvertson

PIONEER VENUS PROJECT BRINGS JOY AND

SUNRISE ON VENUS AS SEEN FROM THE PIONEER SPACECRAFT ORBITING VENUS– This image shows the crescent of Venus illuminated by sunlight during the early morning of the Venus day. It is the first picture taken by the Cloud Photopolarimeter on the Pioneer Venus Orbiter, constructed from measurements completed at 9 PM EST on December 5. The Planet's surface is entirely blocked from view by a thick veil of haze remarkably uniform brightness. As the spacecraft continues to orbit the planet, making one revolution every 24 hours, the configuration for viewing the illuminated hemisphere of Venus will continually improve until late February, when the full planet will be observed in "high-noon" condition. It is expected by the scientists responsible for the imaging experiment that at that time it will be possible to peer through the upper veil of bright haze and see more sharply defined cloud structure at greater depths in the Venus atmosphere.

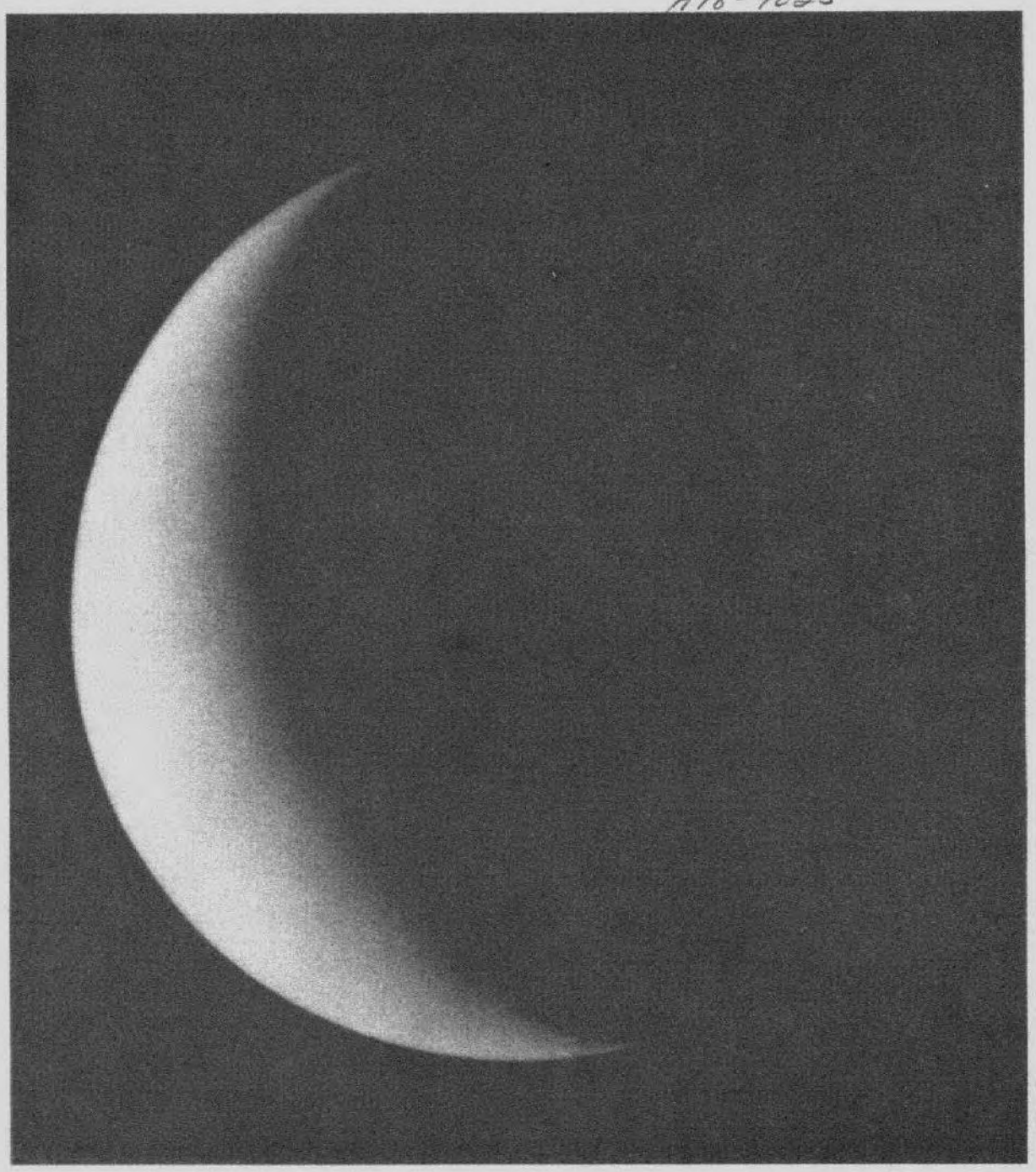
Sophisticated computer contrast enhancement techniques will be applied to the first images during the next few weeks to bring out the full available information on the haze and cloud structure. However, the low level of contrast in the first image has already suggested an answer to a basic question about the vertical structure of the Venus atmosphere. The dark clouds observed by the United States spacecraft, Mariner 10, in 1974 are apparently located beneath the veil of bright haze. Mariner 10 observed contrast variation of about 30 percent in the ultraviolet from a phase angle of about 25 degrees. (The phase angle is the angle between a line from the spacecraft to the Sun and a line from the spacecraft to the center of Venus.)

The contrast variations in the Pioneer image are less than about 5 percent, except for the gradual decrease in intensity from the bright limb to the terminator dividing the illuminated morning crescent from the night side of the planet. Scientists at the Goddard Institute for Space Studies in New York, who supplied the Cloud Photopolarimeter experiment for Pioneer Venus 1, interpret the low contrast level as being due to the grazing angle of the Sun's rays and the low angle of viewing during the early Venus morning. This is the basis for the expectation that the contrasts will steadily increase until late February when the phase angle will be nearly zero degrees.

The first image was taken in ultraviolet light during the spacecraft's second orbit at a distance of about 60,000 kilometers from Venus. It was obtained point-by-point by the Cloud Photopolarimeter, a small (1½ inch diameter) telescope, as the spacecraft spun at 5 revolutions per minute and moved along its orbital path. The sequence of numbers obtained was radioed by the Orbiter to NASA's Deep Space Network tracking station in Canberra, Australia, then relayed through the Goddard Space Flight Center in Greenbelt, Maryland, to the Goddard Institute for Space Studies in New York.

Approximately four hours were required to make the measurements for the image. There are approximately 1000 lines of data from the top to the bottom of the image and 500 points per line at the image center. Thus the resolution near the middle of the terminator is about 50 kilometers.

A78-9025



The first phase of the Pioneer Venus mission concluded with presentations of early scientific results to science writers and television audiences in the Bay Area on Thursday, December 14. The numerous briefings throughout last week by Pioneer Venus experimenters have revealed that the inert gas argon has been found, first by the Orbiter and then by the probe instruments, marking the first identification of that substance at Venus. The presence of large quantities of the isotope Argon 36 – relatively rare on Earth and on Mars – was so surprising that scientists here are saying its discovery may demand a total revision of planet-formation theories. The finding could indicate that Venus was formed from very different materials than were Earth or Mars.

The tenacious Day Probe, which unexpectedly survived impact with the planet and sent back data from the surface for 67 minutes, now is thought to have landed in a soft medium, possibly dust or ash. This is the first time a soft substance has been identified on Venus.

Data from the four probes which entered Venus' atmosphere indicate that the cloud layer which enshrouds the planet disappears at about 30 miles altitude. An immaculately clean atmosphere was found from 30 miles down to the surface, but the atmosphere is so dense that visibility would be quite limited.

At 15 miles altitude, the large Sounder Probe's Gas Chromatograph identified seven substances: neon, nitrogen, oxygen, argon, water, sulfur dioxide and carbon dioxide.

The presence of about 97 percent carbon dioxide and one-tenth of one percent water supports the theory that Venus' intense 900°F heat is the result of a "greenhouse effect" trapping heat from the Sun.

On the Orbiter, the Infrared Radiometer detected a "hood" of material over the north pole, which might be water vapor, but has not been positively identified.

Orbiter instruments have also detected a sudden blast of solar wind which moved at about 370 miles per second. From this data, scientists predict that a magnetic storm detectable from Earth will begin today.

Orbiter data on the solar wind indicates that since orbit insertion the wind had been dropping in speed. Early measurements showed the solar wind moving at about 280 miles per second. Recent measurements had shown it moving at about 155 miles per second, considered very slow for the solar wind. Probably as a result of this slowing solar wind, the edge of the Venus ionosphere has been moving from an altitude of 155 miles above the planet out to 930 miles altitude. It now appears that Venus' ionosphere may hold off the solar wind as effectively as does the Earth's magnetosphere. As expected, Venus appears to lack a magnetosphere.

Project Manager congratulates team

Hundreds of people are responsible for the success of the Pioneer Venus mission Project Manager Charles F. Hall commends all of the work and effort put into this program with the following statement. He writes for the Astrogram, "Between Nov. 15 and December 15 Ames Research Center was the world wide command center for one of the most ambitious and complex space activities to date. The overwhelming success of these activities is a tribute to the proficiency and training of the teams of Ames, JPL, Bendix, Hughes, Deep Space Net personnel and others. They are to be congratulated and they should feel very proud of their achievements."

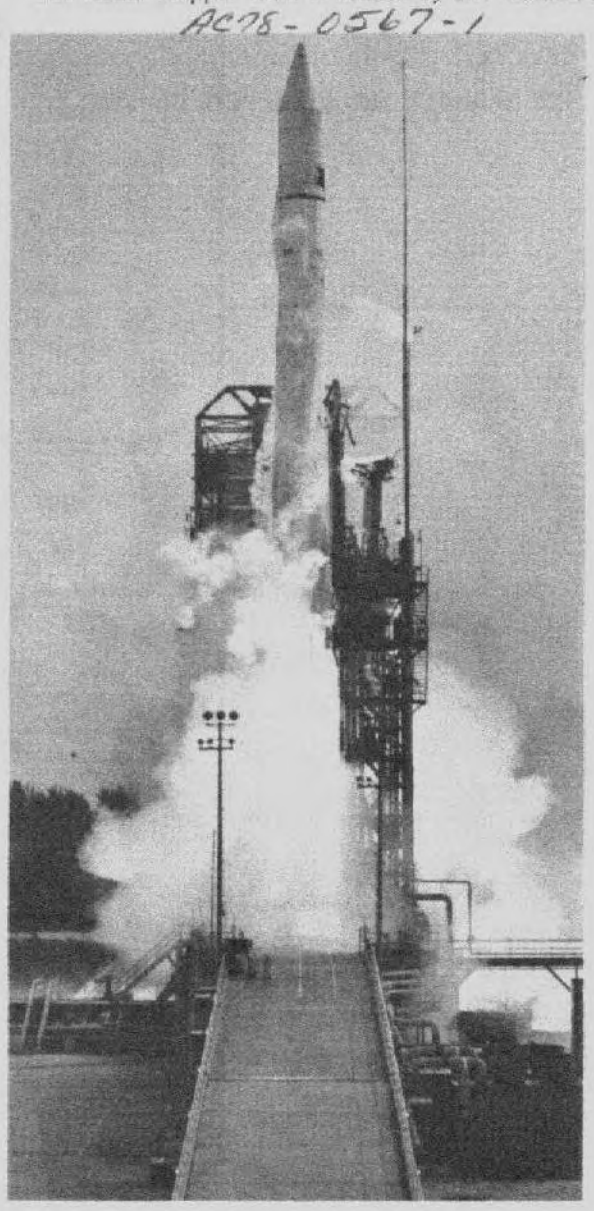
SUCCESS TO PROGRAM INVESTIGATORS

A78-9016-7

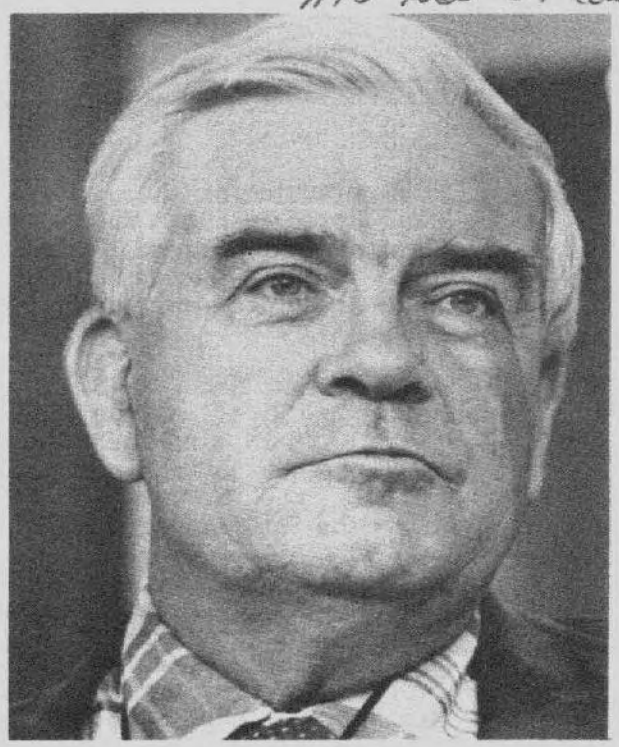
PIONEER VENUS 1 MAPS PLANET SURFACE– Once in orbit early Monday morning, Dec. 4, Pioneer Venus 1 began radar mapping of Venus' surface. The radar mapper takes one radar scan of the planet each Earth day (each 24-hour orbit). It mapped a belt completely around Venus in 243 days (time of one Venus rotation on its axis). The maps included Venus' unmapped hemisphere never visible from Earth. Known Venus topography includes a huge mountain (Beta) and a 1000-km-long "grand canyon."

The Radar Mapper team is headed by Dr. Gordon Pettengill, Massachusetts Institute of Technology.

AC78-0567-1



A78-9035-89 (cropped)



Charles F. Hall

A78-9035-91

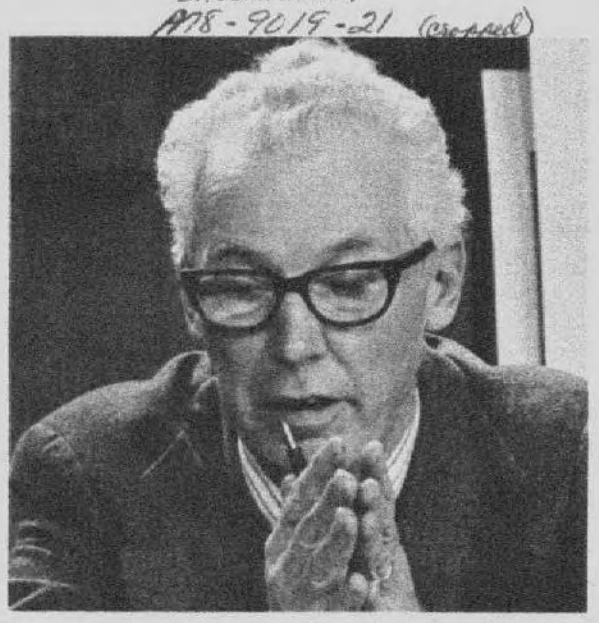
Dr. Lawrence Colin

A78-9018-29 (cropped)

Dr. John H. Wolf

A78-9018-26 (cropped)

A78-9019-21 (cropped)



Dr. Thomas Donahue

December 19, 1978 thru December 25, 1978

A LA CARTE MENU

TUESDAY
Chicken Cacciatore.....
Baked Corned Beef Hash and Poached Egg.....
Choice of One: Whipped, Parmesan Potatoes, Steamed Cabbage, Corn O'Brien or Salad
Soup - Cream of Spinach or French Onion.....

WEDNESDAY
Meat Loaf Home Style and Sauce.....
Sausage and Rice Casserole.....
Choice of One: Snowflaked, Lyonnaise Potatoes, Bean Sprouts & Vegetables, Buttered Spinach or Salad
Soup - Old Fashion Navy Bean.....

THURSDAY
Baked Ham and Raisin Sauce.....
Turkey A La King on Biscuit.....
Choice of One: Mashed Potatoes, Candied Yams, Buttered Corn, Green Beans or Salad
Soup - Philadelphia Pepper Pot.....

FRIDAY
English Fried Sole Almondine.....
Turkey Cream Cheese & Macaroni Casserole.....
Choice of One: Whipped, German Fried Potatoes, Buttered Celery, Cauliflower Au Gratin or Salad
Soup - Seafood Gumbo

MONDAY
CHRISTMAS DAY

DAILY SPECIALS
INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE.....

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP...

DAILY DIET SPECIAL

(Chef's Choice) - Vegeterian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg.....

December 26, 1978 thru January 1, 1979

A LA CARTE MENU

Baked Chicken with Orange Glaze.....
Spaghetti and Meat Balls.....
Choice of One: Whipped Potatoes, Rice Pilaf, Mixed Vegetables, Buttered Hominy or Salad
Soup - Scotch Barley (Lamb & Vegetables).....

Yankee Pot Roast and Potato Pancake.....
Spaghetti and Ravioli.....
Choice of One: Mashed, Country Fried Potatoes, Zucchini & Tomatoes, Mixed Beans or Salad
Soup - Cream of Broccoli.....

Roast Pork and Dressing, Glazed Apple.....
Beef Paprikash over Noodles.....
Choice of One: Snowflaked Potatoes, Yams, Beans & Mushrooms, Creamed Spinach or Salad
Soup - Chicken Broth and Rice.....

Shrimp Creole and Rice.....
Zucchini and Beef Casserole.....
Choice of One: Whipped, Baked Potatoes, Green Beans, Cauliflower Au Gratin or Salad
Soup - Fulton's Market Clam Chowder.....

NEW YEARS DAY

INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE.....

(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP...

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

NASA/Ames Research Center

CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

VSMN

DEC 25 – MERRY CHRISTMAS!	DEC 26 –	DEC 27 –	DEC 28 –	DEC 29 –
JAN 1 – HAPPY NEW YEAR!	JAN 2 –	JAN 3 –	JAN 4 –	JAN 5 –
JAN 8 –	JAN 9 –	JAN 10 –	JAN 11 –	JAN 12 – The next Calendar will cover the period January 8th – January 26th. If you wish to announce an event the deadline is December 20th. Please contact Linda Mackey, Visits Coordinator, Ext. 5546, M/S 253-1.

WEEKEND ACTIVITIES:

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

Ames employees celebrate length of service at ceremony

Ames employees with 20, 25, 30, and 35 years of Federal service were honored at the Annual Length-of-Service Awards Ceremony held in the Ames auditorium recently. Center Director C. A. Syvertson presented the 30- and 35-year awards and the Organization Directors presented the 20- and 25-year awards to the following personnel:

35 YEARS SERVICE

Office of the Director
John C. Dusterberry
Services and Supply Division
Robert I. Lemon
Samuel H. Miller
Personnel Division
Lester B. Briggs, Jr.
Procurement Division
Herbert G. Mallett
Aerodynamics Division
Charles R. McGill
Victor C. Wolff
Simulation Sciences Division
Eric E. Johnson
Aircraft Operations Division
James D. Chloupek
Cyrus J. Sewell
Samuel T. Yacco
Flight Systems Research Division
Robert L. Kuhlmann
Biomedical Research Division
Melvin Sadoff
Research Facilities and Instrumentation Division
Albert P. Garavaglia
Lee W. Jones
Raymond W. Morris
Carl E. Sorensen
James W. Wortman
Computation Division
Ruth E. Smith
Technical Services Division
Paul J. Barisich
Anthony J. Billalba, Jr.
John F. Burkhardt
Melvin D. Howell
Frederick O. Johnson
Felix S. Raya
Robert M. Tibbetts
Airborne Missions and Applications Division
Hjalmar S. Schacht
Space Science Division
Harold G. Clements
Thermo- and Gas-Dynamics Division
Norman R. Barsi
George J. Giorgetti
Warren H. Nelson
Nadine T. Omlid
Anthony F. Silva

30 YEARS SERVICE

Office of the Director
C. A. Syvertson
Services and Supply Division
Robert D. DeRenzy
Procurement Division
Edwin H. Ramey
Aerodynamics Division
Joseph A. Astalfa
Robert J. Carros
Vernon A. Gnos
Don W. Jillie
Earl R. Keener
Paul W. Laut
Frank J. Ottoveggio
Simulation Sciences Division
Joseph G. Douvillier, Jr.
Bert P. Rock
Aircraft Operations Division
William E. Carpenter
Flight Systems Research Division
Brent Y. Creer
John L. McCloud III
John D. McLean
Vernon J. Rossow
Barbara J. Short
Elwood C. Stewart
Biomedical Research Division
Jiro Oyama
Extraterrestrial Research Division
Vance I. Oyama
Research Facilities and Instrumentation Division
Shizuo Doiguchi
Leonard J. Locher, Jr.
Computation Division
Toribio G. Gonzales
Harry M. Hakayama
Technical Services Division
Albert L. Benitou
Tony Mellado
Airborne Missions and Applications Division
Robert B. Morrison
Raymond C. Savin
Space Projects Division
Duane W. Dugan
Thomas Wong
Thermo- and Gas-Dynamics Division
Barrett S. Baldwin, Jr.
Robert R. Dickey
Donald M. Kuehn
John B. McDevitt

25 YEARS SERVICE

Office of the Deputy Director
Calvin J. Fenrick
Personnel Division
John Arcolino
Doris M. McMahon
Technical Information Division
William D. Balandis
Darryll R. Stroud
Aerodynamics Division
James H. Clark
Helicopter Systems Office
Jay V. Christensen
Flight Systems Research Division
Kiyoshi Aoyagi
James A. Jeske
William R. Wehrend, Jr.
George Xenakis
V/STOL Aircraft Technology Division
Pete Patterakis
Man-Vehicle Systems Research Division
John D. Stewart
Biomedical Research Division
William R. Mehler
Research Facilities and Instrumentation Division
Franklin Chow
Leonard F. Walker
Institute for Advanced Computation
George R. Grant, Jr.
Computation Division
Virginia I. Palumbo
Robert S. Sakamoto
Technical Services Division
Robert W. Delaplaine
James C. DeWitt
Manuel J. Fontes
Albert M. Perkins
John J. Sweeney
Airborne Missions and Applications Division
Ronnie L. Deadmond
Thermo- and Gas-Dynamics Division
William C. Davy
Helen F. Drew
Peter F. Intrieri
Robert L. Kruse
Howard K. Larson
John H. Lundell
Norman B. Zimmerman

20 YEARS SERVICE

Office of the Director
Kitty L. Haugh
Public Affairs Office
Bernard M. Donahoe
Procurement Divisio
Frank C. De Rosa
Ava N. Johnson
John F. Pogue
Technical Information Division
Kenneth R. Atchley
Margaret E. Lundell
Aerodynamics Division
John A. Blair
Le Roy R. Guist
Helicopter Technology Division
James C. Biggers
Simulation Sciences Division
William D. Cameron
Bruce C. Ganzler
Robert J. Miller
Aircraft Operations Division
John J. McLaughlin
Flight Systems Research Division
Michael J. Bondi
John S. Bull
George P. Callas
Luigi S. Cicolani
George R. Cook
Leonard A. McGee
Fred H. Shigemoto
Robert E. Wilson
V/STOL Aircraft Technology Division
Wallace H. Deckert
Mark H. Waters
Biosystems Division
Johnnie O. Coleman
Man-Vehicle Systems Research Division
Daniel L. Baty
Trieve A. Tanner, Jr.
Biomedical Research Division
Paul R. Lundgren
Extraterrestrial Research Division
Phillip D. Quattrone
Research Facilities and Instrumentation Division
Calvin H. Eddleman
William D. Gunter, Jr.
Reginald F. King
Lawrence S. Ng
Technical Services Division
Robert F. Bettendorff
Richard H. Dowell
Peter J. Haro
William E. Shoemaker
Andrew E. Stephens
Yoshinobu Suzuki
Office of the Director of Astronautics
Esther L. Levy
Project Pioneer
Thomas L. Bridges
John A. Ferandin
William O. Garden, Jr.
Airborne Missions and Applications Division
John G. Miller
Space Projects Division
Jerome A. D'Urso
Henry Lum, Jr.
Nick S. Vojvodich
Space Science Division
James E. McGee
Fred C. Witteborn
Robert J. Zeiger
Thermo- and Gas-Dynamics Division
Richard G. Dahms
Mary M. Hall
John T. Howe
Gilbert C. Lyle
Dale E. Martin
Philip R. Nachtsheim

1978 CFC at Ames surpasses goal

The 1978 Combined Federal Campaign (CFC) closed on December 1 with a total of $73,147 received in pledges and cash gifts from Federal employees at Ames. This is an increase of 13.8% over the 1977 giving, which achieves the goal which was set at 13%. A total of 1513 individuals made contributions, 81% of the total number solicited. The CFC Campaign Coordinating Team (Ben Briggs, Tom Tomberlin, and Ed Castle) takes this opportunity to thank all of those who worked to make the campaign a success, particularly the 40 Division/Office Captains and the nearly 100 solicitors.

Editor's Note:

The Management of Ames Research Center would also like to take this opportunity to not only thank the Division and Office captains for their hard work during this year's CFC campaign, but to also congratulate the key campaign figures: Ben Briggs, Tom Tomberlin and Ed Castle. They each did a fantastic job and though Ames was not asked to increase its contributions, the Center willingly took on the task and even surpassed the goal.

Once again, congratulations to those three hard-working and dedicated individuals.

Christmas safety message

Attention All Drivers: The fog, rain, and possibly icy roads of the winter months will soon be with us. Before this inclement weather period arrives, vehicle operators should check and put into good operating condition of the windshield wipers, heater and defroster systems, tires, brakes, and horns. Safe driving habits should be strictly adhered to throughout this period.

Office/Home Safety: The Christmas and New Year holiday season should bring only good cheer and love, but unfortunately injuries and fires often cast dark shadows over this joyous season. The following basic rules, if followed, will provide good insurance against avoidable unpleasant occurrences:

1. Do not hang Christmas lights on metallic trees.
2. Do not buy cut trees that are dry or shedding needles.
3. Do not place trees near spark or heat sources.
4. Inspect Christmas light cords carefully. Replace when insulation is worn, light sockets are loose, or plugs are defective.
5. Do not use indoor electrical equipment outdoors.
6. Do not use non-flame retardant or combustible decorations.
7. Do not leave gift wrappings lying around or burn them in the fireplace.
8. Do not leave an active fireplace unattended.

A good smoke detector, properly installed, is a great idea for your safety and a thoughtful gift for friends and loved ones.

We wish you a Merry Christmas and a Happy New Year.

Credit Union news

The Moffett Credit Union is now offering PROMISSORY CERTIFICATES at 9.7% per annum rate. This high-yield investment matures in only 6 months. You must deposit a minimum of $10,000 or increments of $10,000. This unbelievable rate will be available through December 1978. A penalty is imposed for early withdrawal.

FWPC Laboy completes 3 yr appointment

AC78-1037-1

At a luncheon held November 9 in her honor, outgoing Federal Women's Program Manager Annette Laboy received a certificate of appreciation from the Ames Women's Advisory Group for her "outstanding contribution to the establishment and continuation of the Federal Women's Program at Ames Research Center." The award was presented by Susan Norman, Chairperson of the Women's Advisory Group, and Cindy Smith, representing Mr. Syvertson, Ames Director. Ms. Laboy, who served as Federal Women's Program Manager from 1975 to 1978, was recently appointed Hispanic Employment Program Manager. Janet Glaab has been appointed to assume the duties of Federal Women's Program Manager.

Final 1978 Golf tournament

On December 2, Mike Orozco and Dean Jaynes, Co-Chairmen of the Santa Teresa Tournament, reported that 45 Ames golfers, including 6 guests, played in the last scheduled Ames Golf Club tournament of the '78 season. Cold weather gear such as jackets, heavy sweaters, windbreakers, and earmuffs were evidence of the chilling weather conditions at Santa Teresa golf course. Because of the frozen greens early in the day, the tournament started one-half hour late, which made darkness an undesirable factor for the last few tee-offs.

In spite of nature, there were excellent net scores shot by Dave Banducci (El Sandbagger), Al Llamas (first tournament win), Mike Rozewicz, and Stan Brovarney. Also, this last round would produce a Vardon Trophy champion from among front-runners Pete Johnson, Mike Orozco, and Ina Rathert.

The winners, in their respective flights, are the following:

1st Flight – 1 - Dave Banducci, 2 - Norm Martin, 3 - H. Brem, 4 - Howard Matthews, 5 - Mike Orozco.

2nd Flight – 1 - Al Llamas, 2 - Mike Rozewicz, 3 - R. De Conte, 4 - Mitch Rodovich, 5 - Jack Cayot.

3rd Flight – 1 - Stan Brovarney, 2 - C. McCloskey, 3 - John Pogue, 4 - Earl Levin, 5 - Bob Barrow

To all Ames members and future members: the new season starts early February 1979.

The 1979 Ames Golf Club tournament schedule is as follows:

Feb 10	Sunol Palm	10:30 am
Mar 10	Pleasant Hills	9:00 am
Mar 31	Pasatiempo	11:00 am
Apr 28	Spring Valley	11:00 am
May 19	Sunnyvale	11:00 am
Jun 9	Laguna Seca	9:00 am
Jun 30	Aptos	10:00 am
Jul 28	Santa Teresa	11:00 am
Aug 11	Pajaro	9:00 am
Sep 8	Spyglass Hill	12:00 noon
Sep 29	Riverside	11:00 am
Oct 13	San Jose Muny	11:00 am
Nov 3	Tularoitos	9:30 am
Dec 1	DeLaveaga	9:00 am

Tournament chairpersons are needed for all the above tournaments. Call Ruben Ramos, X5913. Dues for 1979 are now due and payable and should be sent to Dave Banducci, M/S 226-3. Dues are $5.50 plus $2 initiation fee for new members.

Notice

This Winter Quarter Art Gobets will teach the following course at Foothill College:

Engr. 51A Tech. Drawing T TH 4 units
6:00-10:10 pm Classes start January 2, 1979.

Want ads Miscellaneous

(Continued from Page 8)

RACKETBALL – Wallbanger corporate memberships and renewals are still available. Contact Herb Finger for details: 246-3616.

CHAIR and OTTOMAN for sale. White, black, and brown Herculon material. Excellent condition. Call Herb Finger, 246-3616.

S.F. SYMPHONY, De Anza, 6th row near center. Two tickets available for 1/13, 3/17 and 5/12. Below cost. Call 255-6917, evenings.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
79-24	Lead Voucher Examiner	GS-5/6	AFG	Centerwide and Outside	12-29-79
79-25	Supervisory AST Technical Resources Management or Resources Management Officer	GS-14/15 or GS-13/14	AR	NASA-wide	01-09-79
79-26	Voucher Examiner	GS-3/4/5	AFG	Centerwide and Outside	12-27-78
79-27	Supervisory Operating Accountant	GS-12/13	AFG	Centerwide	12-27-78
79-28	Supv. Engineering Technician	GS-12/13	FAO	Centerwide	1-3-79
79-29	Aerospace Engineer, AST Stability, Control & Performance	GS-12/13	FHI	Centerwide and outside	1-3-79
79-30	Electrical Engineer Temporary NTE 1 yr.	GS-13	RFS	Centerwide	1-3-79
79-31	Supvy. Computer Systems Analyst	GS-12/13	RKM	Centerwide	1-3-79
79-32	Modelmaker Foreman	WS-14	RSM	Centerwide Ames Army	1-3-79
79-33	Library Technician (GO)	GS-4/5/6	ATL	Centerwide	01-03-79
79-34	Librarian (Temporary Position)	GS-11	ATL	Centerwide and Outside	01-03-79
79-35	Communications Equipment Operator/ Electronics Technician (GO)	GS-4/5/6	AAC	Centerwide	01-03-79

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-153	Stores Receiving & Shipping Attendant	AAS	Charles Keel (outside candidate)
78-158	Wind Tunnel Mechanic Foreman	STF	Anthony Silva
78-159	Aerospace Laboratory Foreman	STF	William Hackett
79-3	Procurement Clerk (Typing)/Clerk-Typist	ASB	Dorothy Moore Alice Fontanilla (outside candidate)
79-6	Progressman	RSP	Terry Medeiros Jim Peterson
79-22	Electronics Technician	AAC	Cancelled

Want ads

Transportation

FOR SALE $100 or Trade for Dirt Bike, or Sm Honda, etc. Sick- '64 Ford Falcon; Sharp Body; Good Tires; needs Good MECH to make well. Call Alice: 262-6547.

For Sale: 1976 Monza Town Coupe, L4 engine, 4-speed, AM radio, power brakes, 36,000 miles. $2725. Phone (408) 374-6025.

Housing

FOR RENT: 3 bdrm, 2 ba home near Sunnyvale High, $450/mo. Available early January. 253-2687 after 6 p.m.

SQUAW VALLEY CONDO–Completely furnished, 2½ bdrm/2 ba, private entrance, carport, fireplace, mudroom, w/w carpet, walk to tram. 968-4155, after 6 p.m.

SQUAW VALLEY RENTAL–Skiing with no traffic headaches. Fully furnished condo, sleeps 5. Adjacent to lifts. Call 964-2170.

FOR RENT: Alpine Meadows cabin – sleeps 8+, 2 ba, sauna, washer/dryer, AEK, w/w carpet and fireplace. Call 733-5902.

For Rent: S. Tahoe Cabin, 2 ba., sleeps 8. W/w carpet, fireplace, washer/dryer. Call 225-8043.

Miscellaneous

FOR SALE: 9'x12' green carpet, bound, with pad $75. Please call 969-8254 between 5 and 9 p.m.

SHARE (with 3 others) a subscription to Granville and/or other stock market timing/charting services. Call 248-4690 after 7 p.m.

WANTED – STAMPS OF ANY KIND. Don't throw away your used stamped envelopes. The ARC Stamp Club can use them. Please send to M/S 241-15.

FOR SALE: REI Wilderness Parka, navy blue, 60/40 cloth, size large. $20/offer. Eddie Bauer turtle neck sweater, Norwegian 100% wool, size large, $25/offer. White Stag ski outfit, jacket and pants, blue and gold, girl's size 12-14, $10/offer. Crampons, SMC, size 10-11, $15/offer. Call 738-2948.

MARKLIN TRAIN SET (HO). German-style engine and cars. Track, switches and transformer mounted on board. All in good condition. $80 (firm). Call 739-9124 after 6 p.m.

FOR SALE: Selmer Signet "Special" B-flat ebony wood clarinet. New pads and collapsible music stand. $275 or best offer. 327-2428.

WANTED: Dynaco PAT-4 stereo preamplifier. Call Dick Adachi, ext. 5471.

Need ride from San Mateo to NASA Ames Research Center Moffett Field from 8 a.m. to 4:30 p.m. Willing to pay gas expenses. Please call 965-5327 or 345-2069 after 6 p.m.

FOR SALE: '64 VW (Bug) Parts: Seats, glass, engine, transaxle, wheels and misc. bits and pieces. Call 321-3205.

Ride or car pool from Fremont-Hub area, 7:30 to 4:30. Call Ext. 5210 or 797-2630.

Hunting days over! Free to good home: German short hair pointer A.K.C. registered. Good with children. Call 356-2630.

BASF Studio Series Cassettes, 10-90 Min. for $29. Call 946-0308.

Going East? Student needs ride to Illinois or as close as possible. Will share expenses and driving. Contact Keith, Ext. 5325.

Dolomite boots, woman's 7½, worn twice, $85. Nordica boots, woman's 7, three years old, $25. Nordica boots, man's 9, four years old, $15. Avanti skis, Gieze bindings, 165 cm., $25. Call 326-4800 after 1:30 p.m.

STUFF WANTED: Used: pick-ax, contractor's wheelbarrow (5 to 6 cu.ft.), inexpensive guitar, and ski equipment (10½ size boots, a set of ski bindings and 165 to 175 cm skis plus bindings). Call 257-0580 evenings.

SPLASH! Pool membership available. Specializing in the commuter crawl. Take the plunge at Saratoga Ave. and 280 and be fresh as a daisy for work at 7:30. Must bring trunk(s) once a week. Contact Pool Manager, Herb Finger, 246-3616.

(Continued on Page 7)

The Astrogram

Admin. Mgt. Building, Phone 965-5422

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor . . . . . Meredith Moore
Associate Editor . . . . Marcia Kadota
Reporters . . . . . NASA Employees

Deadline for contributions: Thursday between publication dates

National Aeronautics and Space Administration
Ames Research Center
Moffett Field, California 94035

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Moffett Field, California 94035

NASA

The Astrogram

VOLUME XXI NUMBER 6

December 28, 1978

OUTSTANDING ARC ACHIEVEMENTS FOR 1978

RESEARCH SUPPORT DIRECTORATE

Construction of the Vertical Motion Simulator (VMS), a new flight simulator with exceptionally large vertical travel, was completed and checkout tests were conducted to ascertain its acceptability. The simulator which joins the arsenal of other flight simulators in the Center provides six degrees of motion freedom to a fully outfitted cab and is intended to fill the gap left by existing flight simulators in performing critical tasks such as aircraft flare and touchdown, particularly for V/STOL and carrier aircraft landing, and controls with degraded longitudinal stability. The VMS is housed within a rectangular tower, measuring 36 ft X 73 ft X 110 ft high, attached to Building N243 and is capable of providing vertical motion of 60 ft, lateral motion of 40 ft, and longitudinal and rotational motion of the cab through a hydraulically actuated hexapod motion generator.

The project for modification of the 40- X 80-Foot Subsonic Wind Tunnel officially broke ground on November 2, 1978. The principal speaker for the occasion was Dr. James J. Kramer, Associate Administrator for the Aeronautics and Space Technology. Construction contracts totaling $10.3 M have been awarded during 1978.

In 1978, the Computation Division has installed and now operates an in-house C.O.M. system for use by the Ames computer community. Computer Output on Microfilm (C.O.M.) is one of the latest and most efficient techniques for transmission and storage of voluminous computer output. The use of the system is steadily growing, now running about 500 jobs per month, producing almost 200,000 frames per month, with a greatly improved turnaround schedule over the previous service.

The Institute has begun a cooperative project with the Air Force to provide ground segment data reduction for the Satellite Infrared Experiment (SIRE). This cooperative venture will provide the Air Force and NASA with valuable information about stars and other celestial objects emitting radiation in the infrared region of the electromagnetic spectrum.

The Institute, in cooperation with the National Oceanic and Atmospheric Administration (NOAA), has begun the development of an automated nautical cartographic chart system that will eventually become the operational system used by NOAA to produce all the nautical charts within its responsibility.

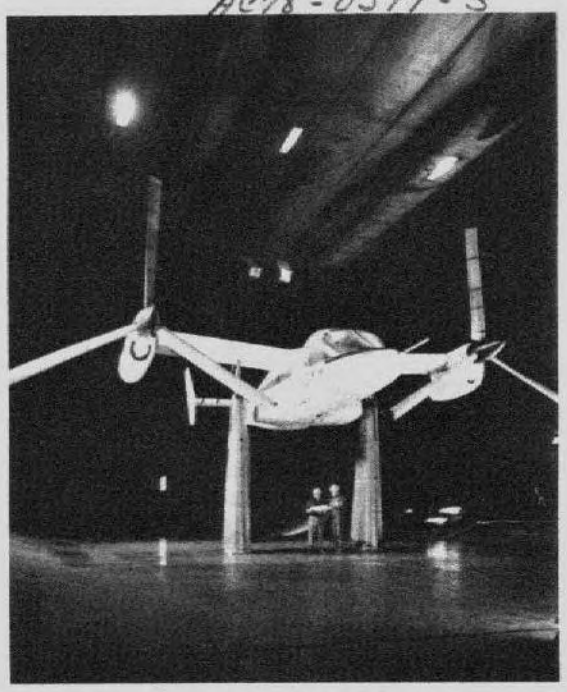
AERONAUTICS DIRECTORATE

Thrust Augmentor Model – A large scale wind tunnel model demonstrated the static and flight performance of a VTOL aircraft thrust augmentor design. The model was designed and fabricated by de Havilland of Canada, under contract to Ames, and was tested in the 40- by 80-Foot Wind Tunnel. The targets for augmentor performance were exceeded.

Development of an on-board computer system for optimizing climb, cruise and descent trajectories of aircraft was completed. The nation's airlines and aircraft manufacturers have shown great interest in the concept and are taking steps to implement it. The system provides information to the pilot for minimizing fuel consumption and operating costs throughout the flight.

After completion of hovering tests at Bell the XV-15 Tilt Rotor Research Aircraft was delivered to Ames and tested in the 40- by 80-Foot Wind Tunnel. The objectives of the testing were to establish, within the tunnel operating limits, a flight envelope and conversion corridor as determined by stall, power or loads. Aircraft performance, stability, control effectiveness, vibration and noise characteristics have been obtained at various conversion

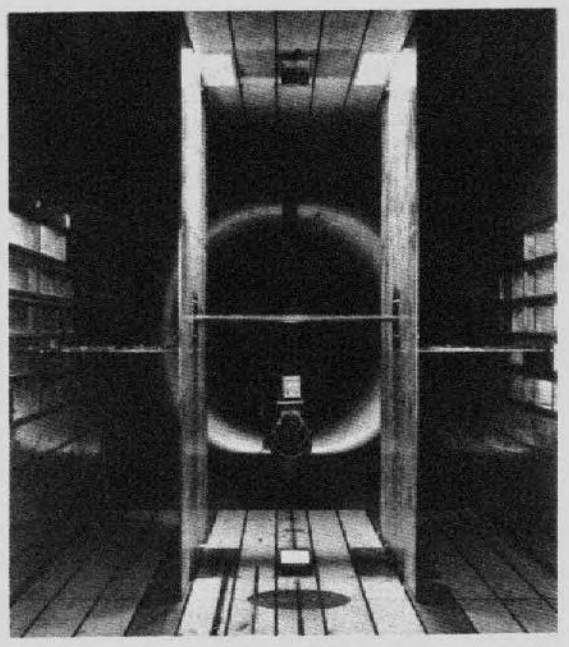
AC78-0579-3



angles and power settings. The next major event in the program will be the initiation of the Contractor's (Bell Helicopter-Textron) Flight Test Program scheduled to begin in early 1979.

The first of two Rotor Systems Research Aircraft (RSRA) was accepted at NASA Wallops Flight Center on November 2, 1978 by a team of Ames personnel. The Ames team completed flights to expand the aircraft envelope in gross weight and altitude in preparation for ferry to Ames during January.

A two-dimensional oscillating airfoil apparatus was successfully tested with two airfoil models in the Ames 11- by 11-Foot Transonic Wind Tunnel. This apparatus provided unsteady aerodynamic loads at higher oscillation frequencies and higher Reynolds numbers than ever before achieved.



Through a test of a Mach 0.8 turboprop slipstream simulator in the Ames 14-Foot Wind Tunnel, the aerodynamic interactions associated with the installation of these types of propulsion systems with advanced supercritical wings were found to be considerably less than anticipated, enhancing the potential viability of turboprops to reduce substantially the fuel consumption of advanced transport aircraft.

A series of studies to identify the critical aerodynamic technology items associated with VSTOL Fighter/Attack Aircraft have been completed and provided four aerodynamic configurations that will be tested in the Ames Unitary and 12-Foot Wind Tunnels to investigate such items as: propulsion induced flows, canard/wing/nozzle interactions, topside inlets, and lift system volume effects on drag and aerodynamic center positions.

Optimization techniques were used to design a new lower drag wing for the A-7 fighter. The wing is 70% thicker which will give the A-7 longer ranges. Wind tunnel tests verified the design.

An exploratory investigation of flying qualities of helicopters during terminal area operations was conducted on the Flight Simulator for Advanced Aircraft in conjunction with a joint NASA/FAA program to determine certification criteria for helicopters for single and dual pilot operation in instrument meteorological conditions. Variations in flying qualities from satisfactory to unacceptable were obtained for various helicopter rotor configurations, stabilization and control augmentation, and visibility conditions.

The usefulness of spoilers in terminal area operation of light-wing-loading STOL aircraft has been explored in flight on the DHC-6 Twin Otter. Determinations were made of the contribution to roll control and glide-slope tracking and of the improvement in landing performance in adverse winds.

The Aerodynamics Division, in its facilities, provided over 10,000 hours of occupancy during 1978 in support of numerous research and development programs for Ames, for other NASA Centers, for industry, and for the Department of Defense. Significant programs include: Oscillating Airfoil research, AD-1 airplane (Ames); Space Shuttle (JSC), Energy Efficient Transport (LRC), HiMAT (DFRC); DC9 development (Douglas Aircraft); F-18, XFV12-A, Cruise Missile Target, Advanced Harrier (YAV8-B and AV8-B) Chin Inlet Cruise Missile (Navy); F-15 laser turret, SR-71 (Air Force); and Hawk missile (Army).

As part of the Energy Efficient Transport program support, a test of an isolated powered nacelle was conducted in the 11- by 11-Foot Transonic Wind Tunnel for the first time at the Ames Center.

During 1978, the Aerodynamics Division incorporated the routine use of an interactive video graphics system to present data, as they are acquired, from tests conducted in the 11-by 11-Foot Transonic Wind Tunnel in the form of plotted coefficients for analysis.

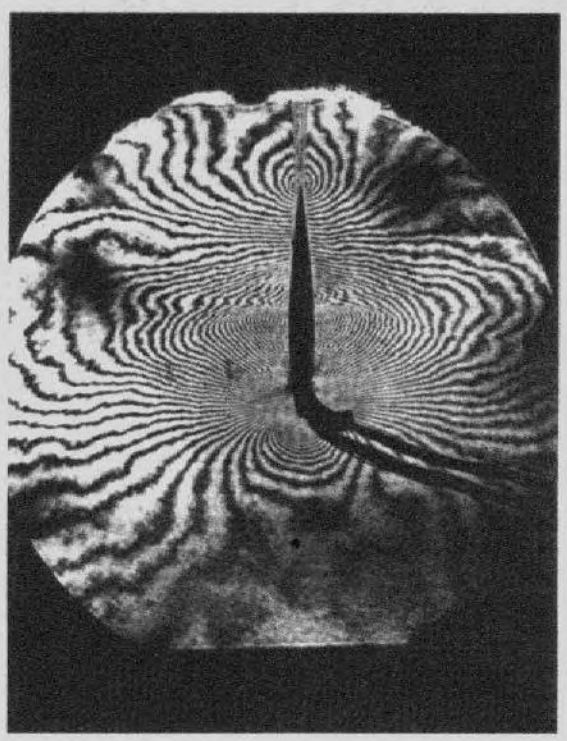
The Quiet Short-Haul Research Aircraft (QSRA) was delivered to Ames on August 3, 1978, and completed its proof-of-concept flight test program on August 29, 1978. The aircraft is impressively quiet and promises a valuable research program of terminal-area flight experiments to generate design and certification criteria for practical propulsive-lift aircraft. A QSRA Experiments Workshop was conducted in November to encourage participation by the aeronautical community.

The Center's new CDC 7600 Simulation Computer was delivered August 29th, 1978. During the previous three months, Simulation Sciences Division personnel completely reorganized the computer labs in Buildings 210 and 243, to provide room for the new computer. The CDC 7600 was operational within one month of delivery, and Government acceptance testing started October 2nd. The computer was accepted prior to November 1st.

Circulation Control Rotor – A new helicopter rotor concept which uses fixed pitch blades was successfully tested in the 40- by 80-Foot Wind Tunnel during July of 1978. This rotor system (termed the Circulation Control Rotor) uses air jets exhausted near the trailing edge of the rotor blade to provide rotor control, rather than the collective and cyclic pitch variation utilized by conventional rotors.

The first automatic landings of a powered-lift jet STOL airplane using the new National Microwave Landing System (MLS) were completed when the Augmentor Wing Airplane equipped with the STOLAND digital avionics system resumed operation at the Navy Crows Landing auxiliary landing field following an extensive overhaul.

Holographic interferometry has been applied to transonic airfoils to obtain contour mapping of the air density and Mach number. This non-intrusive technique provides an easy way to obtain such information.



On April 21, 1978, the U.S. won the international competition for the Microwave Landing System (MLS) standard, and a *Wall Street Journal* stated that this victory will make a significant reduction in the U.S. balance of payments over the next ten years. Ames' key CY 1978 contributions to this important victory include (a) the development and demonstration of a low-cost MLS airborne receiver which was of great importance in determining the international vote, (b) the conduct of static and flight performance/optimization tests of the Texas Instruments MLS at Crows Landing and the delivery of the data to the FAA for worldwide demonstration of representative performance of this class of MLS, and (c) timely support of Air Force and Navy operational MLS flight evaluations. The Ames MLS contributions are supported by numerous letters of commendation from high DOT/FAA, DOD, and NASA officials.

Extensive turbulent flow measurements have been obtained by the laser velocimeter technique on an axisymmetric flow model. This type of data is fundamental for development of prediction methods for the strong inviscid-viscous interaction occurring on transonic airfoils.

A computer program which solves the transonic full potential equation for the quasi-steady flow over a complete helicopter rotor blade has been developed. The code is not limited to small angles of attack and treats lifting cases.

The Total Automatic Flight Control System (TAFCOS) has been applied to the automatic carrier landing of a Navy A-7E carrier based attack aircraft. Substantially improved landing performance in comparison to the A-7E Automatic Carrier Landing System had been demonstrated in simulation studies on Ames' IBM 360 computer.

Evaluations of stabilization and command augmentation systems for improving flying qualities of helicopters in nap-of-the-earth flight have been conducted on the Flight Simulator for Advanced Aircraft. Satisfactory flying qualities for negotiating a terrain course requiring lateral and longitudinal maneuvering agility were obtained with systems which provide improved stabilization and decoupling for pitch, roll, and yaw control.

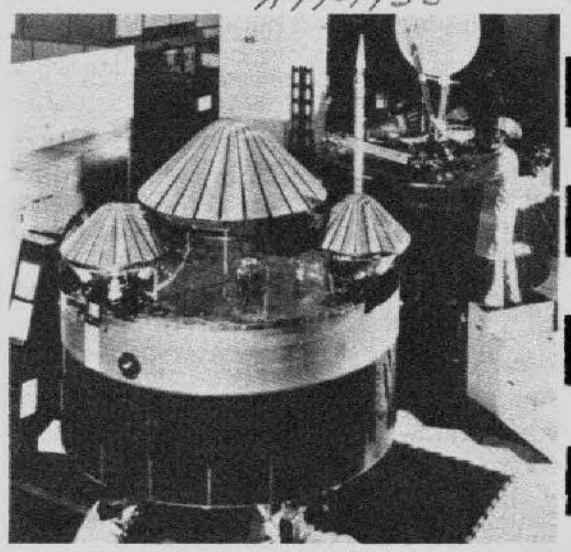
The possibility that the airline onboard flight data recorder is not accurate enough to establish the precise conditions at the time of an aircraft accident was investigated by NASA and the National Transportation Safety Board. These tests were conducted using Ames heavily instrumented Convair 990 airborne laboratory. For example, the acceleration trace may not be accurate enough for use in analyzing vertical and horizontal wind shears, which have been the cause of several airline accidents. This investigation could affect the next generation's flight data recorders as well as existing equipment.

ADMINISTRATION DIRECTORATE

40 workers of the Services and Supply Division occupied of the 80,000 square foot Supply Support Facility during 3 weeks in September, 1978. Trucks no longer are stacked up, since three trucks can now be unloaded concurrently.

ASTRONAUTICS DIRECTORATE

The Pioneer Venus Multiprobe was launched from Cape Canaveral Air Force Station on August 8, 1978. The Large (Sounder) Probe was separated from the Bus on November 15 and the three Small Probes (North Probe, Day Probe, and Night Probe) were separated on November 20. The four probes entered the Venusian atmosphere on December 9 and impacted the surface at widely separated locations. The Bus entered and burned up in the atmosphere on the same day. A77-1433-



Pioneers 6–9 – Pioneers 6–9 continued to perform synoptic studies of the interplanetary phenomena in the region between 0.75 and 1.20 Astronomical Units from the Sun during special events. Pioneer 6 has been returning scientific data for 13 years, a record for interplanetary missions.

Pioneers 10 and 11 – Pioneer 10, following its encounter with Jupiter in December 1973, is continuing to penetrate the outer reaches of the solar system. It passed the orbit of Saturn in February 1976, and has currently reached a distance of approximately 17.4 Astronomical Units from the Sun. Pioneer 11, following its encounter with Jupiter in December 1974, is heading toward the first encounter of Saturn in September 1979. The final targeting maneuver of the spacecraft for this encounter was performed on July 13, 1978.

Pioneer Venus – The Pioneer Venus Orbiter was launched from Cape Canaveral Air Force Station on May 20, 1978 and inserted into an elliptic orbit around Venus on December 4. The spacecraft is continuing to orbit the planet once a day. The spacecraft systems and scientific instruments are performing normally.

A Low Visibility Environmental Effects Simulator has been successfully developed at Ames to support research in the area of low visibility landing, pilot perceptual disorientation, and landing cue utilization. The device is designed to realistically produce the visual degradation and visual distortion effects resulting from rain, fog, lightning, and wind. It is composed of a self-contained waterproof chamber that contains an aerosol fog generator, windshield with wiper, water flow control apparatus and computer interface electronics. The simulator attachment may be used with any day or night visual scene equipment by inserting it between the scene monitor and the collimating optics observed by the pilot.

An aircraft interior panel which is resistant to flame propagation has been developed. The panel utilizes a phenolic novolak laminating resin which is used as face sheet for the aircraft interior panels to reduce smoke evolution, toxicity, ignition properties and flame propagation. This laminating resin will be utilized in the construction of advanced panels for future wide body aircraft.

New and extraordinary effective fire extinguishing agents for aircraft engine fires have been developed from inorganic complexes which not only put out damage induced engine fires but prevent restarting. These agents will be manufactured by the United States Air Force for application to military fighters and soon may be available for domestic transport aircrafts.

Automated In-Situ Water Quality Monitoring – Researchers at Ames and JSC have developed an automated system for monitoring the quality of water for an urban housing complex that would recycle all of its waste products, and to monitor water quality in reservoirs, municipal water supplies, etc. The project has demonstrated that day-to-day operation of such a sophisticated water monitoring system is feasible, and appears to hold great promise for reducing the cost, and chemical and energy consumption for operation of water treatment plants.

Fire Weather Data System – An automated fire weather monitoring system designed at Ames, consisting of twenty remote sensor stations in northern California forests, telemeters weather data via the GOES (Geostationary Operational Earth Satellite) eight times per day to national weather service computers in Washington, D.C. These data are available daily to the California Department of Forestry for monitoring the weather for fire hazard levels. The State of California plans to implement the system operationally statewide.

California Irrigated Lands Assessment for Water Management Project – This project is a cooperative five-year effort between Ames and the California Department of Water Resources, intended to develop methods for estimating the amount of irrigated farmlands, and for making an inventory of crop groups in California, using Landsat satellite data. Methods based upon manual interpretation of Landsat data have been found to be accurate within an error of 3% for a 14-county area. The method will be applied to the entire State in 1979.

Pacific Northwest Project – The Pacific Northwest Project, a joint effort of the States of Idaho, Oregon, Washington, the Pacific Northwest Regional Commission, USGS, and NASA, was initiated about three years ago to explore ways to use Landsat satellite data in the management of natural resources. The first three years of intensive demonstrations have been concluded successfully, and the three States have embarked on a second three year project to develop operational capability to use Landsat data in natural resource management.

A successful U-2 deployment to Boise, Idaho was conducted during the month of February to overfly a balloon experiment conducted by Canadian Atmospheric Service (AES) at Cold Lake, Canada. Data collected with an infrared spectrometer (FLO) were utilized to complement the atmospheric measurements acquired with the AES flight.

A successful U-2 deployment to Davis-Monthan AFB, Arizona was conducted during the month of April to overfly Mexico as part of a research effort being undertaken by the Mexican and American Governments to determine the utility of advanced remote sensing techniques in Mexico.

Early in June, a U-2 aircraft deployment to Ellsworth AFB, South Dakota was conducted for photographic missions at the request of the Environmental Protection Agency. A survey over the State of Wyoming was made as part of a wetlands inventory study.

More than 14,000 miles of excellent U-2 photographic data were taken during the summer months in Alaska. This is part of a three-year project to photograph the State of Alaska for Alaska state offices and various federal agencies and will continue through the summer of 1979 and 1980.

The USDA, Forest Service utilized the U-2 aircraft to develop techniques for forest damage assessment, root disease, and air oxidant injury. In addition, information for large area multiresources inventories including information required for timber management planning was acquired.

Results of astronomy experiments flown on the U-2 aircraft for investigators from Lawrence Berkeley Labs have been extremely promising in supporting the "Big Bang" theory for the creation of the universe. The U-2 has made 10 flights carrying an ultrasensitive microwave receiver designed to measure the residual radiation from the "Big Band" which is utilized to determine the earth's motion with respect to cosmic background radiation.

A joint NASA/USDA measurement program was conducted over an entire barley growing season to determine the suitability of remotely monitoring yield by means of crop temperature measurements. NASA conducted 60 flights during this period utilizing a thermal scanner onboard the Cessna 402 aircraft.

The NASA 714/C-141 Kuiper Airborne Observatory (KAO) made 79 research flights between October 1977 and September 1978, the largest number made in a twelve-month period since the start of the program in 1974. Seventeen investigator teams participated in the program. Two Ph.D. theses published in the past year were based on KAO research.

The infrared astronomy observations from the NASA 714/C-141 Kuiper Airborne Observatory (KAO) continue to provide more and more information about the formation and the development of stars in galaxies. In the past year, the KAO observations were extended to eleven neighboring galaxies. Also, the KAO measurements were coordinated with those from ground-based radio telescopes in order to give a more complete explanation of OH maser stars which do not radiate in the visual range.

Clear Air Turbulence Program – The development and flight testing of an infrared system to provide commercial airline pilots with a one- to five-minute warning of turbulent conditions during clear weather.

Cabin Ozone Study – The study of ozone concentrations occurring in the cabin of aircraft during high-altitude, long distance flights and their undesirable side effects on passengers and crew.

The Lear Jet and an Ames expedition team flew to Athens, Greece to participate in Project Porcupine II, a German-sponsored program to study the earth's magnetic fields during aurora conditions.

The Video Inertial Pointing System (VIPS) was used on the Harvard College Observatory Balloon Flight during May 1978 to substantially improve the pointing accuracies of their 102 cm infrared (IR) telescope. The system will again be flown in the Spring of 1979. More sophisticated versions of VIPS are being developed at Ames for use on the Shuttle Infrared Telescope Facility (SIRTF) and the Space Telescope Fine Guidance Sensor.

A helium three evaporative refrigerator capable of cooling long wavelength IR bolometers in the focal plane of a Shuttle-borne infrared telescope such as SIRTF has been developed and tested at Ames. By achieving an operating temperature of 0.3 Kelvin, the sensitivity of the bolometers may be improved by a factor of 30 (using a baseline reference temperature of 1.5 Kelvin).

The sensitivity of infrared detectors has been improved to new levels for IRAS (Infrared Astronomical Satellite). The new detectors cover four bands from 3 to 120 microns. The most improvement over previously available detectors has been for the longer wavelengths, beyond 30 microns. The Ames-managed IRAS telescope will utilize the new detectors to map the entire sky for new stellar objects.

SIRTF, the Shuttle Infrared Telescope Facility was selected by a peer review group of university scientists as one of the five Spacelab Multi-user facilities to receive funding for continued design studies. This 1.2 meter diameter telescope, cooled to 10°K, will be 1000 times more sensitive than any existing infrared telescope. Ames is conducting design studies aimed at a 1985 first launch. It will be reflown twice per year, thereafter. (Ames people involved: L. S. Young, F. C. Witteborn, M. Kiya, D. Compton, and others.)

An intense infrared brightening of the Jovian satellite Io was observed with the NASA/U. of Arizona 60″ Mt. Lemmon telescope. This is the first time that a large 5-micron fluctuation has been reported for Io. Io is known to have previously exhibited small variations in blue light which could be explained by different surface features becoming visible as a result of Io's rotation. The 5-micorn brightening is so intense that it can be explained only in terms of emission of radiation. The cause of the emission is still unknown, but a principal suspect is bombardment by charged particles from Jupiter's magnetosphere. A report on this finding by F. Witteborn, J. Bregman, and J. Pollack will appear in Science. *(Continued on Page 6)*

NASA

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, California 94035

January 2, 1979 thru January 8, 1979

A LA CARTE MENU

TUESDAY	Veal Scallopini	1.45
	Boston Baked Beans & Polish Sausage	1.30
	Choice of One: Mashed, Ideal Potatoes, Buttered Spinach, Peas or Salad	
	Soup - Fresh Vegetable	.30 & .45
WEDNESDAY	Roast Pork & Dressing	1.45
	Spaghetti and Raviolli	1.30
	Choice of One: Whipped Potatoes, Mashed Yams, Cauliflower Buttered Lima Beans or Salad	
	Soup - Minestrone	.30 & .45
THURSDAY	Beef Stroganoff	1.45
	Macaroni, Cheese and Ham Casserole	1.30
	Choice of One: Snowflaked, Creamed O'Brien Potatoes, Celery and Spinach, Glazed Parsnips or Salad	
	Soup - Cream of Onion	.30 & .45
FRIDAY	Veal Birds with Mushroom Sauce	1.45
	Seafood and Spaghetti with Special Sauce	1.30
	Choice of One: Mashed, Au Gratin Potatoes, Tomato and Celery, Glazed Carrots or Salad	
	Soup - Shrimp Bisque	.30 & .45
MONDAY	Lamb Stew and Dumplings	1.45
	Baked Stuffed Potato with Cheese and Spinach	1.30
	Choice of One: Whipped, Parslied Potatoes, Brussel Sprouts Buttered Beets or Salad	
	Soup - Chicken Gumbo	.30 & .45
DAILY SPECIALS	INCLUDES: A $1.55 ENTREE, VEGETABLE OR POTATO, SALAD ROLL & BUTTER, AND A 25¢ BEVERAGE	1.80
	(CHEF'S CHOICE) HOT SANDWICH AND LARGE BOWL OF SOUP... DAILY DIET SPECIAL	1.10
	(Chef's Choice) - Vegetarian Plate: 3 Vegetables, 1 Jello or Cottage Cheese or Poached Egg	1.50

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HOF BRAU MENU
(Sandwich with Choice of French Roll or Bread)

DAILY	Rare Roast Beef, Pastrami, or Corned Beef	1.65
TUESDAYS	Ham	1.65
THURSDAYS	Turkey	1.65
	Sausage Sandwich on French Roll	1.05

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AN ASSORTMENT OF SALADS, INCLUDING SHRIMP LOUIS	1.60
AND CHEF'S SALAD (are Available)	1.45

NASA/Ames Research Center

CALENDAR OF EVENTS

(POST ON BULLETIN BOARD OR MAIL TO INTERESTED PERSONS)

PREPARED BY:
VISITS COORDINATOR
965-5546 M.S. 253-1

JAN 8 –	JAN 9 – AIAA Membership Drive Meeting Speaker: Al Cleveland, AIAA President and Vice President-Engineering of Lockheed Corp. Topic: Fetters and Freedoms Time: 3:30 p.m. Location: N-201 Main Auditorium For further information: Call Tony Gross, ext. 5845, or Richard Peterson, ext. 5853	JAN 10 – SETI Office/Extraterrestrial Research Division Seminar Speaker: Dr. Dale A. Russell, Paleontology Division, National Museum of Natural Science, Ottawa, Ontario, KIA OM8 Canada Topic: "The Enigma of the Extinction of the Dinosaurs" Time: 2:00 p.m. Location: N-213, Rm. 261	JAN 11 –	JAN 12 –
JAN 15 –	JAN 16 –	JAN 17 – ARA Stamp Club Meeting Time: 11:30 a.m. Location: N-241, Rm. 113	JAN 18 –	JAN 19 –
JAN 22 –	JAN 23 –	JAN 24 –	JAN 25 –	JAN 26 – The next calendar will cover the period January 22nd – February 9th. The deadline is January 17th. If you wish to have an event announced on this calendar please notify Linda Mackey, Visits Coordinator, Ext. 5546, M/S 253-1.

WEEKEND ACTIVITIES:

ARA STORE HOURS: 12:00 - 12:45 TUESDAY & THURSDAY
LOCATED IN N-235 AMES CAFETERIA
NASA-AMES TOUR OFFICE - 965-6497

(Continued from Page 3)

The far infrared spectrum of the molecular cloud named Sharpless 140 was measured from the Kuiper Airborne Observatory. These data were interpreted in terms of a theoretical model which showed that this astronomical object cannot consist of spherical nebula of continuous density distribution with a single energy source at the center. This result refutes previous models of the Sharpless 140 cloud, and is significant for theories of star formation since Sharpless 140 is thought to be a region in which stars are forming or have very recently formed. The work was published in the Astrophysical Journal Letters by A. T. Tokunaga, E. F. Erickson, L. J. Caroff, and R. A. Dana.

The Kuiper Airborne Observatory was used to obtain spectra of Jupiter and Saturn in the far infrared, where both giant planets emit the bulk of their thermal radiation. From these data it was determined that Jupiter and Saturn emit 1-1/2 and 3 times as much energy (respectively) as they receive from the sun. The spectrum of Jupiter, which shows for the first time the presence of important absorption features due to ammonia, is used to determine the temperature versus altitude profile for the Jovian atmosphere. Evolutionary models of the planets which include the thermal properties deduced from the Ames observations show that Jupiter's intrinsic power source is consistent with gravitational energy associated with the formation of the planet, while Saturn's is not. Researchers involved are E. F. Erickson, D. Goorvitch, J. P. Simpson, D. W. Strecker, and A. T. Tokunaga.

A new research program has begun at Ames specializing in the weather and climate effects of stratospheric aerosols. Aerosols are created from volcanic emissions and by natural and man-made pollutants. Both theoretical and experimental studies have begun; the Ames U-2 aircraft will carry new sampling and analysis equipment into the stratosphere for the experimental studies.

An afternoon session at the 1978 Fall Meeting of the American Geophysical Union was devoted to presentations by Ames researchers (and university collaborators) who reported on results obtained during the NASA-Ames-sponsored three-week study of stratospheric dynamics in the Intertropical Convergence Zone. The Ames U-2 and Lear Jet aircraft as well as balloons and rockets were used in the study performed from the Panama Canal Zone in 1977.

In a cooperative NASA grant program with scientists at Arizona State University and the University of Santa Clara, a wind generating machine has been constructed in an open area behind the Center (at the magnetic facility road near Bldg. N-217A). Much of the work was done by University of Santa Clara students. The facility is utilized to perform simulation experiments on the formation and evolution of Martian sand dunes.

New evidence supporting theories of stratospheric aerosol formation from sulfur-containing trace gases was provided by the discovery and measurement of carbonyl sulfate in the stratosphere by E. C. Y. Inn, James F. Vedder, Bennet J. Tyson, and Dean F. O'Hara. The U-2 aircraft, as well as large balloons (launched from Palestine, Texas), were used to carry the sampling apparatus to altitudes of 15 to 30 km in the stratosphere.

Walt Starr and Roger Craig, Ames researchers, have found an unexpected very strong correlation between temperature and ozone concentration in the upper tropical troposphere and lower tropical stratosphere. This correlation was discovered in the analysis of data obtained from instruments carried on the Ames U-2 aircraft. The correlation is significant in that it may lead to an enhanced understanding of the details of mixing processes between the troposphere and stratosphere.

A Workshop on Ground-Based Techniques for Detection of Other Planetary Systems, chaired by David C. Black, was held at Asilomar this past October. These workshops will be instrumental in defining the major thrusts for this new program.

Ames scientists have conducted the first numerical simulations of the collapse of magnetized interstellar clouds.

Ames scientists have constructed the first photochemical-microphysical model capable of calculating details of formation, growth, coagulation, and removal of atmospheric aerosols, and have also constructed the first coupled photochemical-microphysical model of the Venus clouds. The latter will be used to interpret Pioneer Venus data.

A study has been completed of the effects of historical land use changes on climate. They show that the humans could have contributed to nearly all the climate changes that occurred during the past 5,000 years.

Ames scientists have completed radiative convective model calculations showing that aerosols from volcanic eruptions could have a major impact on the Earth's climate.

The formation and evolution of spiral and elliptical galaxies are being studied by fully three-dimensional numerical experiments on the ILLIAC computer. These experiments investigate the effect of star formation on the dynamical evolution of a galaxy and the effect of nucleosynthetic processing of material on the interstellar medium.

The Ames Research Center Pioneer Venus Orbiter Plasma Analyzer Experiment performed flawlessly throughout the cruise phase of the mission returning valuable interplanetary data on the solar wind. Since Venus orbit insertion on December 4, 1978, the Plasma Experiment has continued to return excellent data on the interaction of the solar wind with the Venus ionosphere.

The Plasma Analyzers on Pioneers 10 and 11 also continue to return data from interplanetary space.

Four Ames experiments on the Pioneer Venus probes returned data from the atmosphere of that planet. The experiments and Principal Investigators are: Atmospheric Structure – A. Seiff; Infrared Radiometer – R. Boese; Nephelometer – B. Ragent; Gas Chromatograph – V. Oyama.

A compact, nonobtrusive, bi-directional, skin-friction gage has been developed to measure the wall shear stress beneath a three-dimensional turbulent boundary layer. The gage demonstrated a good potential for general use with three-dimensional boundary layers, including flows with severe pressure gradient and separations.

A two-dimensional Navier-Stokes airfoil computer code is providing steady- and unsteady-flow solutions on the ILLIAC with sufficient speed to make practical the prediction of airfoil section buffet boundaries. Preliminary results for a conventional NACA airfoil and a modern supercritical airfoil indicate good agreement with available experimental data.

Conditionally-sampled laser-velocimeter measurements of the real-time velocity components in the unsteady, periodic, transonic flow field about an airfoil have been compared with a solution of the time-dependent Navier-Stokes equations. Computed results show remarkably good agreement with the unsteady measurements.

Through solutions of the Navier-Stokes equations, comparisons of the ability of several sophisticated eddy viscosity models of turbulence to predict complex flow phenomena associated with shock-wave boundary-layer interactions for two-dimensional transonic and supersonic flows have been made. So-called multi-equation eddy viscosity models yielded improved predictions relative to those obtained with the less sophisticated algebraic eddy viscosity models for these flows.

The sustained oscillation of ailerons at transonic speeds, known as aileron buzz, has been simulated on a computer. The numerical results for the buzz frequency and aileron deflection history show good agreement with tests conducted on an F-80 wing in the Ames 16-foot wind tunnel at the end of World War II.

Computer simulations of turbulence and transition have been carried out on the ILLIAC IV using half a million grid points. Calculated mean velocity profiles and turbulence intensities in a circular jet compare favorably with experimental measurements.

A new family of rigid low density ceramic insulation and materials called Fibrous Refractory Composite Insulation has been developed by Ames. It has more than doubled the strength, has higher temperature capability and better strain compatibility with its ceramic coating than the reusable insulation materials now being installed on the Space Shuttle Orbiter; and should, therefore, have future commercial applications.

Two Ames proposed thermal protection experiments have been approved by the Orbiter Experiment (OEX) Program to fly on early Space Shuttle flights. One will determine the effect of surface catalycity on convective heat transfer during atmospheric entry. The other is a study of the effect of heatshield tile gap geometries on heatshield performance during atmospheric entry. As a result of these experiments future improved thermal protection designs of reduced weight will be possible.

A number of innovations developed by Ames have been adopted or are under study for the Space Shuttle Orbiter heatshield. Among these are a new type of heat shield that has been completed which will decrease cost and increase reliability of the Shuttle. A new processing procedure for silica reusable surface insulation called vacuum degassing developed by Ames has been adopted by Lockheed Missiles & Space Company and will be implemented as part of their manufacturing process during 1979. This improved process will increase material uniformity and therefore decrease labor cost and increase process yield resulting in significant cost savings for the Shuttle Thermal Protection System. A new black, high-emittance, ceramic fiber has been developed by 3M Company under Ames sponsorship and is being studied for use on the Shuttle Orbiter for gap fillers and seals. Because of its high thermal emittance, fabrics made from these new fibers will operate at lower temperature during reentry and therefore make the Shuttle System more reliable.

The first predeclared development tests on full scale components of the Shuttle Orbiter thermal protection system have been performed. These tests are required to certify the Orbiter for flight.

The first ablation test program on candidate heat shield materials for the Jovian entry probe (Project Galileo) has been completed in the Giant Planet Pilot Facility. Initial tests on these same materials have also been completed in the Ames CO_2 Gasdynamic Laser. These two facilities provide the best available simulation of the Jovian entry heating environment, so these tests will provide a significant measure of confidence in the flight performance of the probe heat shield.

A contract to design and build an advanced avionics system for general aviation aircraft was awarded to Honeywell teamed with King Radio. This contract is the culmination of a 4-year research effort. The resulting system, employing advanced concepts such as cathode ray tube displays, microprocessor computers, etc., will be flight-tested in the Ames Cessna 402-B in 1981.

Computer codes, that couple the transport of mass, momentum, chemical species, energy, and radiative transfer (on a spectral basis) for a reacting gas which flows about a massively ablating probe during entry into the outer planetary atmospheres, were exercised under the Giant Planet Facility test conditions. The codes converged, and the results were applied as inputs to detailed heat shield material response codes, including materials which backscatter radiation in depth, charring ablators, and materials which both char and pyrolyze (or decompose) in depth. Results were compared with experiments.

Heating to ablating probe afterbodies was studied in two shock tube facilities, as well as theoretically. It was found that the afterbody heating is significant for Jupiter entry, is primarily radiative, and is more severe when forebody ablation products are entrained in the wake.

Radiative properties of various ablation species were studied experimentally and theoretically. A new absorption band system for C_2H was discovered in the vacuum ultraviolet part of the spectrum.

Ballistic range data were obtained to determine the flight dynamics and stability of asymmetrically ablated probe shapes in Hydrogen-Helium atmospheres corresponding to Jupiter entry.

LIFE SCIENCES DIRECTORATE

The final results of the seven U.S. experiments flown aboard the unmanned Soviet biological satellite Cosmos 936 were presented in October, 1978 at an international symposium in the Soviet Union and also at the Fall meeting of the American Physiological Society in the U.S. Noteworthy observations by Ames investigators of the animals exposed to orbital spaceflight included: a dramatic reduction of bone growth and strength, a threefold increase in the rate of red blood cell breakdown, substantial muscle atrophy, and changes in the liver which resulted in increased stores of glycogen (animal starch) and in alteration of enzymes controlling the conversion of sugars to fat. Members of the Ames team were honored with a NASA Group Achievement Award presented by Dr. Lovelace on November 17, 1978. The Soviets have accepted 12 Ames managed experiments for another biological satellite scheduled for launch during the summer of 1979.

It has been shown that humans can learn to suppress the symptoms of motion sickness through autogenic training, a combination of biofeedback and relaxation training. Studies completed in the past year indicated that a subject who learns to suppress motion sickness symptoms while being rotated in one direction, his training transfers to rotation in the other direction. This result suggests that the training method may be effective for any new motion environment, including that of zero gravity in space.

As part of NASA's crew/passenger medical selection criteria program, studies were carried out on the physiological responses of men and women aged 45–55 following 10 days of strict horizontal bed rest which simulated some of the effects of weightlessness. These older individuals appeared to tolerate acceleration stress longer following bed rest than younger people previously tested. However, when blood pressure and heart rate changes occurred, they occurred more precipitously and recovery took longer in the older people. The use of anti-"G" suits was of some value in ameliorating the adverse physiological changes experienced by both younger and older people during these simulated space flight conditions.

As an outgrowth of bioinstrumentation developed for animal studies of the space cardiovascular deconditioning problem, an implantable pressure monitor was developed for long-term monitoring of intracranial pressure in humans. This capability provides an important diagnostic tool when treating patients suffering from brain tumors, stroke, or other cerebral dysfunctions. The first implant of this device was performed in early 1978 at the Stanford Medical Center on a young man who required surgery to remove a brain cyst. The device has since been used successfully on three other patients.

The Aviation Safety Reporting System (ASRS) was established in April 1976 to explore the feasibility of collecting, analyzing and reporting about safety-related incidents within the national aviation system. To date, it has processed over 14,000 reports and has distributed more than 516 Alert Bulletins concerning time-critical information. In addition, over 70 special studies have been conducted for industry use, and eight Quarterly Reports have been issued concerning the operation of the system.

Experiments by Ames researchers have shown that numerical data entry made by automatic human speech recognition produces less interference with manual control performance than data entry by standard keyboard techniques. Follow on simulator experiments showed that the speech data entry techniques developed at Ames are minimally influenced by either the noise or vibration characteristics of helicopters or transport aircraft.

Ames personnel built a cooling jacket for a young boy with a rare congenital skin condition. A portable pumping-chilling unit carried in a knapsack on the boy's back circulates cold water through tubes in the jacket. The technology, developed at Ames, is proposed for cooling personnel wearing advanced space suits.

Computers were used to calculate and display graphically the dynamics of molecular interactions which may have been important for the origin of life. The method uses the CDC 7600 to calculate the energies involved in interacting molecules and to move the molecular models into positions or conformations of minimum energy.

Studies of the isotopic composition of carbon (ratio of carbon-13 to carbon-12) in the organic matter of the Murchison Meteorite indicate that at least two episodes of organic synthesis occurred in the early solar system, one on dust grains suspended in the primordial solar nebula prior to their accretion into larger bodies and one on the surface or near-surface of the larger parent body from which the meteorite was derived.

The astronomical observations of the "wave of darkening" on Mars during the recession of the polar caps were simulated in the laboratory by the reaction of water vapor and carbon suboxide polymer. The polymer has also been shown in laboratory simulations to account for some of the reactions of the Viking Biology Experiment on Mars.

The 1978 Stanford-Ames-ASEE Engineering Design summer study completed the first detailed design of an Earth-orbiting microbiological containment facility. This manned, free-flying laboratory was designed to allow quarantine testing and hazard assessment of a returned Mars sample prior to release to terrestrial laboratories. Some details of the biobarrier laboratory module are shown in the accompanying artist's sketch.

AIAA President to speak

Al Cleveland, President of the American Institute of Aeronautics and Astronautics, and Vice President-Engineering of Lockheed Corporation will present a talk in the Ames auditorium on Tuesday, January 9, 1979, at 3:30 p.m. The talk is entitled "Fetters and Freedoms," and will be concerned with impediments to the contributions of aerospace research and engineering to society as a whole created by the fetters of the anti-technologists. He will also discuss the importance of understanding and explaining as a means of overcoming these impediments.

Mr. Cleveland joined the Lockheed Corporation in 1946 as an aerodynamics engineer. He worked on various aircraft programs, including the nuclear-powered aircraft project, the C-141 and the C-5A. He has held the post of chief advanced design engineer, assistant chief engineer, deputy program manager, and vice president for advanced programs, in addition to his present position.

This talk marks the beginning of an AIAA membership drive at Ames, and non-members of AIAA are particularly encouraged to attend.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
79-36	AST Space Sciences Chief, SST	GS-14/15	SST	NASA-Wide and Outside	01-19-79
79-37	Contract Specialist	GS-12/13	ASF	Centerwide	01-19-79
79-38	Aerospace Laboratory Mechanic Leader	WL-11	STF (N-234)	Centerwide and Ames Army	01-12-79
79-39	Aerospace Laboratory Mechanic Leader	WL-11	STF (N-238)	Centerwide and Ames Army	01-12-79

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-149	Supvy AST Measurement and Instrumentation Systems, Branch Chief	RFS	Salvador A. Rositano
78-154	Contract Specialist	ASR	Daniel Cathcart
		ASR	Carmen Young (outside candidates)
78-155	Contract Specialist	ASR	Linda Eroh
79-13	Library Technician	ATL	Ruthie White
79-19	Administrative Support Clerk	D	Pamela Riley
79-35	Electronics Technician GS-4/5/6 (GO position)	AAC	Cancelled

Want ads

Transportation

'63 Buick Wildcat, 100 K mi, still runs well. $350. Call 926-6608 evenings.

FOR SALE: 1967 Porsche, 912, 4-speed, no rust, new windshield, excellent body and mechanicals, $6200. 343-9730.

FOR SALE: 1968 Ford Custom 500, automatic, power steering, 4-dr, new tires. $300 or best offer. Call Krish Santhanam, ext. 6304.

GREAT FUN camper – "strawberry parfait" KAR-A-VAN, converted '73 Ford bubble top van, am/fm/8-track w/rear speakers, auto w/power steering/brakes, Econoline 150. 65,000 mi. $5,500, firm. Call (408)946-0543 after 6 p.m.

'66 Ford Mustang 2+2 Fastback, Hi Perf. 289. Cobra Hood, very good cond., $2700. 941-2653 evenings, after Dec. 30.

1973 VW Bus, good shape, $2850; call 867-4422 eves. or ext. 6640.

Housing

APARTMENT for rent: Diplomat Apts., Crestview Dr., 961-1335. 2 bdrm, 1 bth, $345/mo. $175 security deposit.

SQUAW VALLEY RENTAL: Skiing with no traffic headaches. Fully furnished Condo. Sleeps 5. Adjacent to lifts. Call 964-2170.

FOR LEASE: 4 bdrm, modern house. Fireplace, deck, family room. All schools and shopping centers within 2 blocks. ½ block from Hwy. 237 in Milpitas. Furnished or unfurnished, carpeted, plants, ready to move in. Elec. kitchen, dishwasher. $425/mo. 984-1580. Ask for Rene.

FOR RENT: House, fully insulated, 3 bdrm, 1½ bth, laundry room, quiet street, room for garden, close to Valley Fair. Easy access to Hwys. 280 and 17. Screened in patio. $425/mo. Available in latter part of January. Call 244-7310.

FOR SALE: 3 bdrm house, 1 bth, private backyard with large hot tub. Corner lot. Exc. location in Cupertino. 996-0709 or 967-9166.

FOR RENT: Beach House Pajaro Dunes (near Watsonville). Completely furnished, including linens; cleaning included in the rent; beautiful views of Monterey Bay, 100 feet from the beach; tennis courts. Reserve now for Winter and Spring. Call John Lundell, 252-7260.

Miscellaneous

Will the "R. Vito TR6-1, 6577" who checked out a book by A. Hoffer please call the Life Sciences Library, ext. 5387.

FOR SALE: Store fixtures (showcases), 263-6515 or 263-1636.

FOR SALE: Four 12"x5" wheels from a 1976 Honda CVCC, $45. 738-4166.

FOR SALE: Large sofa, celery green crushed velvet, exc. cond. $135. 738-4166.

ARA ACTIVITIES

There are just a few vacancies still available for the Fun Train Trip to Reno on March 2, 3, and 4, 1979. The train will leave from Oakland depot at 16th and Wood Streets, March 2, 6:30 p.m., and return March 4, at about 6:00 p.m.

An escort staff member will be on board the train to aid in your comfort and enjoyment. There will be a live dance band on board both ways. A $10.00 nonrefundable deposit will hold your reservations. The balance is due no later than January 17, 1979. *Do not send cash.* Please make check payable to "ARA" and send to Armando Lopez, MS:210-10.

Present plans include the charter of a bus (at a small additional cost, which will be assessed later) from Ames to Oakland on Friday, March 2, and from Oakland to Ames on Sunday, March 4. This will allow everyone to leave their cars parked at Ames.

Stanford TV classes

Courses begin January 4

ACE TV

Courses begin January 8

FOR SALE: Sears room air conditioner, 2 part unit, 4 speed. $50. 964-0315.

LOST: Man's large fountain pen MONT BLANC, black with gold trim. Please return to George Lenehan (200-26), ext. 5055.

FOR SALE: Pentax Spotmatic "F", W/F 1.4 50 mm lens w/case, $250; Vivitar 35 mm wide angle F.2.8, $60; Vivitar 200 mm telephoto F.3.5, $40. Call 262-4425.

FOR SALE: 1 pr of Sony transceivers, high performance, good distance, used twice, exc. cond. with carrying cases, not a toy, $75; Royce model 1-648 40-channel AM mobile gyro-lock CB transceiver (boxed) with antenna. Used twice, exc. cond., $85; 3 silver and black dressy formals (orig. $60 ea.), 2 never used, size 14, $15 ea. Phone (408)294-9289.

FOR SALE: Wurlitzer console piano Italian provincial, walnut finish, mint condition, $695, 323-7070.

FOR SALE: Youth chair, maple, $10. Childcraft How and Why Library, 15 volumes, never read, $15. Rabbit, California pure bred, $5; with hutch, feeder, etc., $15. Phone 253-1454.

FOR SALE: 55-gal salt-water aquarium complete w/air and filter pumps, filters and bubblers, seascaping, hood and light, and steel stand with decorative wood apron. Ladies wetsuit size 12-14 and Deep Star regulator. Phone 245-0614.

FOR SALE: Membership in Cessna 120 Flying Club, $6.75 wet tach, call 244-7310.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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